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A detailed illustration of a busy industrial harbor. Several large steamships and cargo vessels are docked at a pier. Red gantry cranes are visible, along with various industrial buildings and structures. The scene is set in a wide river or bay.

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The greatest attraction of Mena and Polk County for the health seeker is its splendid summer and winter climate. There is no hot, sultry summer or grim, cold winter in this region, but instead, a cool bracing temperature in a pure, undefiled atmosphere. Pure, soft water is found everywhere and excellent medicinal springs abound in many places. The altitudes of the City of Mena vary from 1200, to 1600 feet.

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The Mena Land and Improvement Company has in Mena some fifty or more cottages and more pretentious buildings which it will rent or sell to those who may desire to locate at Mena, or who may desire to spend their summer or winter vacations there. Descriptions will be furnished on application to

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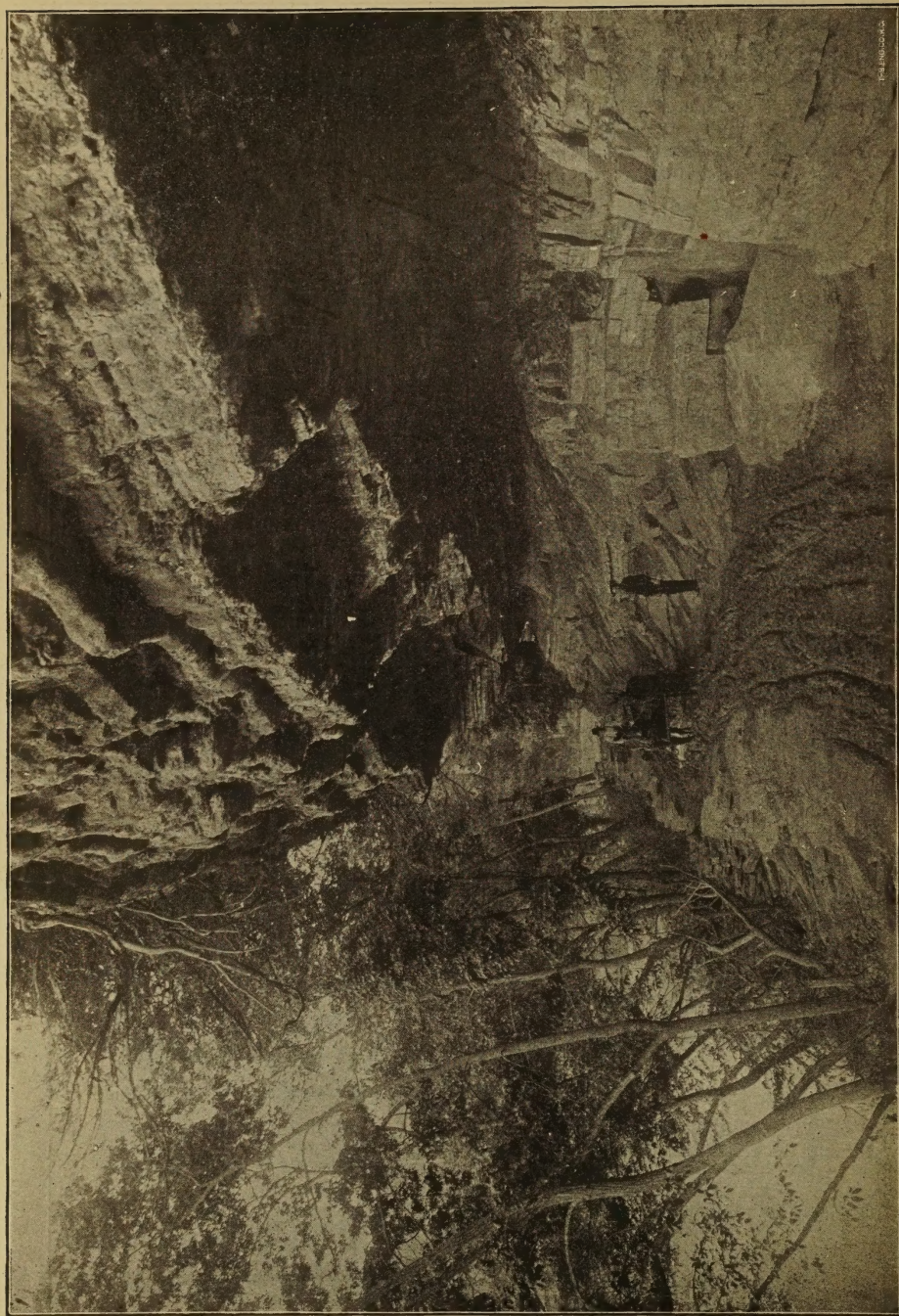
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F. E. ROESLER, Editor

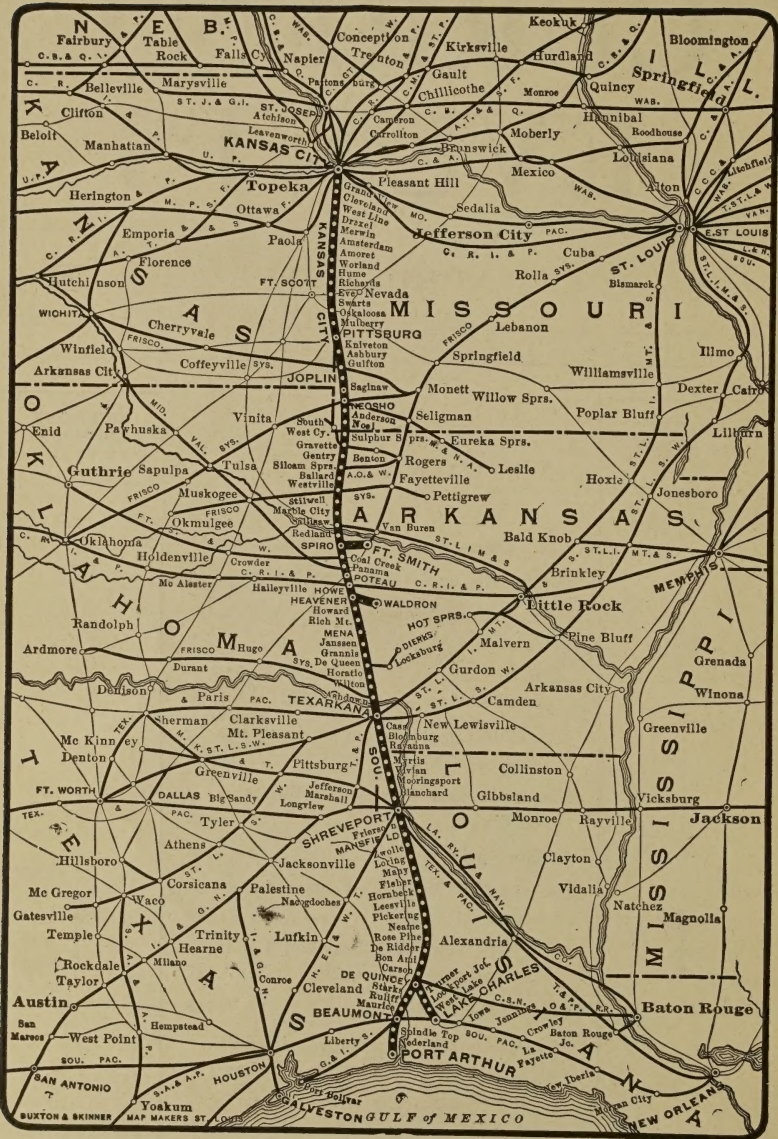
VOLUME
FOURTEEN
No. 2

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MAP OF THE KANSAS CITY SOUTHERN RAILWAY.

The Panama-Pacific International Exposition

The great international exposition to celebrate the completion and formal opening of the Panama Canal was opened to the world on February 20, 1915, and will remain open to the public until December 4, 1915.

It is authorized by Act of Congress of the United States, and will be participated in by the Argentine Republic, Bolivia, Brazil, Canada, Chile, China, Costa Rico, Cuba, Denmark, Dominican Republic, Ecuador, France, Guatemala, Haiti, Holland, Honduras, Italy, Japan, Liberia, Mexico, Nicaragua, New Zealand, Panama, Persia, Peru, Portugal, Salvador, Spain, Sweden, Uruguay, and Venezuela.

It is estimated that the total cost will be \$50,000,000, of which amount \$20,000,000 has been subscribed by the citizens of California, who thus show their faith by their works. Much of this amount is to be so spent that while it will all contribute to the beauty of that ephemeral wonder city by the Golden Gate, it will survive the closing of the Exposition and remain as a permanent part of the San Francisco that is to be.

It is the first universal exposition ever held on Pacific shores, and no other has remained open for so long a period. California's climate makes possible nine and a half months of combined outdoor and indoor festivities. Summer is cool, with no rain, but an occasional fog. The winter is minus snow, ice, and blizzards. A few rainy days may be looked for during November, March and April, of the exposition period. The temperature the year around is about that of early May in New York, London, or Chicago.

The exposition grounds comprise 635 acres. They are conveniently situated between the Presidio and the Italian quarter. They extend for about two and a half miles along the edge of San Francisco Bay, just east of the Golden Gate. They are only two miles from the heart of the business district, are about half a mile wide, and are enclosed on three sides by abruptly rising hills which form a natural amphitheatre. It is an ideal location, for accessibility, shelter and beauty.

As indicated by the map, there are three main sections. Eleven huge exhibit palaces, with an aggregate floor space of eighty-five acres, and festival hall are grouped in the center. To the east are the amusement con-

cessions, occupying sixty-three acres. To the west are located the imposing pavilions of foreign nations and the various state buildings; while beyond these are the livestock exhibits, the race track, the aviation field and the drill grounds.

Everything is in compact shape for sight-seeing with a minimum of fatigue.

The exhibit palaces are planned to contain the most noteworthy examples of what has been done during the last ten years, the world over, in all lines of human endeavor, such as fine arts, education, social economy, liberal arts, manufactures, and varied industries, machinery, transportation, agriculture, food products, horticulture, mines, and metallurgy. These palaces are grouped in a series of rectangles, connected by arcades and courts. In the center is the immense Court of the Universe, with a sunken garden, and surmounted by the group of eastern and western nations. To the east is the Oriental Court of Abundance, dedicated to dancing and pageantry. To the west is the Occidental Court of the Four Seasons, with its Moorish arches. The Court of Flowers and Court of Palms are other floral features. The courts are circled by colonnades, triumphal archways, towers, domes, and minarets, in bewildering array. Statuary, mural paintings, parterres, and fountains add to the picture.

The base of the Tower of Jewels covers an acre of ground, and its spire rises to a height of 435 feet; this bejewelled tower is set in a spacious garden. Opposite, on the water front, is the marine esplanade, 300 feet in width, adorned with gardens and terraces.

The Palace of Machinery is the largest building of them all, being 968 feet long by 368 feet wide. The Palace of Fine Arts describes an arc of a fifth of a mile; here will be displayed the world's most famous paintings and statuary. The Palace of Horticulture covers five acres, is mainly built of glass, and is surmounted by a dome 150 feet high. Each of the other palaces has its special charm and appeal—but all form a harmonious whole.

Festival Hall contains a huge pipe organ, a main hall seating 3,000 persons, and ten smaller halls.

The California Building, in old-mission style, covering seven acres, and costing half a million dollars, will be the "host" edifice.



ITALIAN TOWER, PANAMA EXPOSITION.

of the Exposition; the Woman's Board will have charge of its administration.

The Exposition Auditorium is located in the civic center of San Francisco. It is to be four stories in height and will accommodate an audience of 12,000.

The National Government exhibit will be staged upon a 10-acre field. Here will be exemplified the buildings of the Panama Canal, sanitation, general engineering, fisheries, and lighthouse service.

There will be naval reviews, displays, and maneuvers galore. In the bay alone is abundant sea room in which to assemble the combined fleets of all nations, a superb spectacle. A varied program of spectacular events is assured. The international military tournament, participated in by foreign troops, also American militia and regulars—nearly 40,000 men—will last all summer. Aviation and athletic meets, boat and auto races, and a song festival, are other attractions. American art will receive a new impetus, and up-to-date educational displays will be a prominent feature. By day the

ivory buff walls of the buildings, with their red-tiled roofs, green domes, and splashes of blue and gold, will be a color revelation. At night it will be an electric fairyland, with striking effects never before used. A system of "flood" lighting produces a soft effect in the courts, while concealed batteries of powerful projectors will make the tower "jewels" flash like a million star points.

At the foot of Market street, where the ferry system pours out its flood of passengers, the gate of the Exposition City will open to its guests. Market street, San Francisco's main thoroughfare, is 120 feet wide. For a distance of over two miles this street, lined with tall buildings and at night blazing with lights, will be an avenue of triumph.

Zeppelin dirigibles will be on exhibition, carrying passengers on daily trips for hundreds of miles.

Other World's Fairs have had their midways under different names. None of these lanes of laughter, down which the revelers of past expositions have strayed, has had such ideal surroundings or a wider field from which to garner all that is quaint, picturesque, laughable, sensational, and educative, as the "Zone."

The exposition management announce that very reasonable rates are assured by the 2,000 hotels and apartment houses of San Francisco, also by the numerous hotels of Oakland, Berkeley and Alameda, across the bay. Excellent rooms may be secured for \$1.00 to \$3.00 a day each person, European plan, for any date or for any length of time desired. Substantial meals may be had at restaurants for 35c to \$1.00 each. A large exposition hotel, known as the Inside Inn, is to be erected on the grounds; rates for rooms, \$1.00 and up; meals at standard prices.

The entire administrative work of the Exposition is vested in the president, Mr. Charles C. Moore, and the board of thirty directors. The vice-presidents are Messrs. Wm. H. Crocker, R. B. Hale, I. W. Hellman, Jr., M. H. DeYoung, Leon Sloss, and James Rolph, Jr. The executive work is intrusted to the president, the director-in-chief, Dr. Frederick J. V. Skiff, and the directors of the four divisions, Mr. George Hough Perry is in charge of publicity, and Mr. A. M. Mortensen is traffic manager.

Joplin, Missouri, and Jasper County

It was 'way back in 1838, when a Tennessean by the name of John Cox moved into Missouri and settled in the southwest part of the state in what is now Jasper county. The following year, 1839, a Methodist missionary preacher, Rev. Harris G. Joplin, came and settled on the site of the city which now bears his name. To the latter is due the credit of discovering the minerals which in the course of years have made Joplin the unique city of the continent and there is no other city like it. Lead ore was the only mineral recognized at the time, and mining, in a desultory way, was carried on several years before the Civil war. The records of the early production were unfortunately not preserved and up to 1870 lead mining was only an incident in the activities of the people.

In 1870 a mining and smelting company, known as the Granby Mining and Smelting Company, which was located at Oronogo, then known as Minersville, offered a prize of \$500 to the persons who would mine and turn in from any single mine the largest amount of mineral from March 1 to July 1, 1873.

It was to this offer the city of Joplin really owes its start. Two prospectors, J. B. Sergeant and E. R. Moffet, won the prize, and with this money purchased a leasehold on eighty acres of land in the Joplin Creek Valley and here were laid the foundations of the future city. Sergeant and Moffet sank their first shaft on the east side of Joplin Creek, 200 feet north of where the Broadway bridge now stands. Here, after a month of labor, they struck a fine vein of pure galena. The news spread like wildfire through the country and prospectors came flocking to what is now Joplin, pitched their tents and constructed box houses and frame store buildings. W. P. Davis and Patrick Murphy opened up a general merchandise store in 1871.

The several mining camps commenced to lay out streets and several towns came into existence. Judge Jno. C. Cox laid out a town on the east side of Joplin Creek, naming it Joplin. On the west side of the creek Murphy, Moffet, Davis, Sergeant and E. C. Elliott laid off another town and called it Murphysburg. As the two towns grew considerable rivalry developed between them,



MAIN STREET, LOOKING NORTH, JOPLIN, MO.



FOURTH STREET, LOOKING EAST, JOPLIN, MO.

each struggling for the commercial and industrial supremacy of the district. In March, 1872, on petition of the inhabitants of both towns, they were incorporated under one charter as Union City. In 1872 Union City had 2,707 inhabitants; a count taken a year later credited Union City with 4,000 inhabitants. The constant wrangle between the two sections of the town brought the legality of its incorporation before the county court of Barton county, which finally declared the corporation illegal and dissolved the city administration.

The Missouri legislature on March 24, 1873, provided a new charter for the city of Joplin. This charter remained in effect until June, 1888, when the charter of 1873 was surrendered and Joplin became a city of the third class. Mr. E. R. Moffet was appointed the first mayor of Joplin by the governor of the state.

The man who has been in touch with the growth of the West during the last third of a century has had opportunity to observe many things and among these the growth of the town. When a boom lands on a new spot things usually begin to happen, the first happening being an auction sale of town lots, bringing prices ranging from twenty-five to one hundred dollars per lot. The purchaser of a lot for a time feels doubtful about the wisdom of his purchase, the only resource in sight being a half dozen new farms, or, if it is in a mining region, a hole in the ground with good indications and a lack of certainty. He communes with himself, flips a dollar to confirm his judgment on the premises, erects a two

hundred dollar frame building, puts in a five hundred dollar stock and awaits further developments. After a few weeks others do likewise and before long there is a straggling main street and few side streets with nondescript dwellings. Usually the mercantile stocks are of poor quality and the new hotel in point of excellence is ten degrees below the dog. The local trade is not extensive, and for a time the new town is far ahead of the surrounding country. In the vicinity within twenty or thirty miles are other holes in the ground, affording prospective town sites and for a while there is some question as to which point will be the winner.

The first year or two in town there were no waterworks, no sewerage, no graded streets. Wooden sidewalks will keep the people out of the mud. In the third or fourth year the country has caught up with the town. The location has proven itself to be fairly good and its trade is now permanent. People begin to trade in town lots, there is talk about grading the streets; the need of a water supply and grumbling about insurance rates. There are now several hotels, among them a really good one, a newspaper, bank and in the adjacent country some well developed mines and numerous farms, and about this time the usual fire cleans out the business part of town.

Substantial brick buildings now take the place of the frame buildings, the weekly newspaper becomes a daily, the little state bank soon has a competitor in the First National. The next few years bring an

assembly hall, opera house, graded and paved streets, waterworks, fire department, fine school buildings, a commercial club and some of the retail merchants have become wholesalers or jobbers. The railroad bonus is raised and the railroad secured and then comes a wagon factory, a hospital, electric street cars and three or four story brick buildings, etc., etc.

Joplin, Missouri, like all other western towns, had to go through the process outlined above. It was located in a fertile section of Missouri, but so were a dozen other townsites. Mineral was found in many places. It was due largely to the energy of the citizens of Joplin in the early days that the mining industry was centered at that point. Some of the other towns were equally well located, but lacked the push that builds great cities. They survived, grew in population and became prosperous. Webb City, population 12,000, Carthage, population 10,000, Cartersville, population 6,500, Granby, Duenweg, Oronogo, Alba, Prosperity in Missouri and Galena in Kansas, are important and prosperous towns, but Joplin outgrew them all.

Joplin's greatest development took place between 1877 and 1890. Local enterprise had built the first railway, the Joplin & Girard Railway. In 1879 the Missouri & Northwestern Ry., now the St. Louis & San Francisco Ry., was built from Oronogo to Joplin and the cars were running before the close of the year. In the same year the Kansas City, Fort Scott & Gulf Ry. was built to Joplin and the first train ran over the line in October, 1879. This line also became part of the St. L. & S. F. System.

In 1890 the Missouri Pacific Ry. and the Splitlog Railroad reached the city. This latter railway became part of the Kansas City Southern Railway. In 1915 the railway facilities of Joplin consisted of the Kansas City Southern Railway, the St. Louis & San Francisco Railway, the Missouri Pacific Railway, the Missouri, Kansas & Texas Railway, the Missouri & North Arkansas Ry., the Missouri, Oklahoma & Gulf Ry., the Atchison, Topeka & Santa Fe Ry., and two electric suburban railway systems, the latter having 175 miles of trackage and connecting nearly all the lead, zinc and coal mining camps within a radius of forty miles.

The year 1915 finds Joplin with a population of 45,000, two-thirds of whom own their own homes.

Within an hour's ride from the central part of the city there are resident between 150,000 and 175,000 people, all of them in close touch with the city through the railways and suburban lines.

Surrounding the city and branching out in all directions is a network of splendid country roads, in all over 500 miles of perfectly constructed macadam roads, surfaced with chat from the hundreds of lead and zinc mines.

In the city there are more than 150 miles of paved and macadamized streets and about 150 miles of concrete sidewalks.

The sewer system comprises about forty miles of perfect sanitary drainage.

The public school system of Joplin embraces nineteen commodious school buildings valued at \$583,950. Two hundred teachers are employed and 6,859 pupils at-



A RESIDENCE STREET, JOPLIN, MO.

tend the schools. The enrollment of the Joplin High School was 754 during the present year.

The street car system of Joplin embraces about thirty miles within the city. The electric interurban lines covering 175 miles of trackage enter the city and use the local tracks.

About 600 mines employing about 12,000 persons are ordinarily in operation, though at times, when the value of lead and zinc ores is high, this number is largely increased.

The predominating industry of Joplin is the mining, handling, marketing and smelting of lead and zinc ores. The value of this production since mining began in the district has been as follows: Up to 1859, inclusive, lead only, \$1,153,000; 1860 to 1869, inclusive, lead only, \$874,800; 1870 to 1879, inclusive, zinc and lead, \$8,737,666; 1880 to 1889, inclusive, zinc and lead, \$20,121,862; 1890 to 1914, inclusive, zinc and lead, \$236,565,587; total production, \$267,452,915. The greatest production in point of value was that of 1912 when it reached \$18,043,479. The production of 1915 based on a great demand and exceptionally high values is estimated at \$20,000,000.

In the matter of fuel, power, heat and light, few cities are so well equipped as is Joplin. The Pittsburg-Cherokee coal field is less than twenty miles distant and the average price of coal for industrial purposes is \$2 per ton. Natural gas from the Oklahoma fields is delivered at 12½ cents per 1,000 cubic feet. The electric power plants, supplying Joplin with electricity, have a capacity of 300,000 horse power. All the suburban railway lines, street car lines, electric light systems and many of the mines and concentrating mills in the district derive their power and light from this source.

The municipal fire department is one of the best in the United States. It is up-to-date in all respects, has an automobile equipment, a splendid waterworks system with 108 miles of water mains and 3,000,000 gallons daily capacity, 395 fire hydrants and 56 automatic fire alarm boxes.

Among the more important institutions of Joplin are: the St. John's Hospital, cost \$150,000; forty church buildings, valued at over \$500,000; four municipal parks; more than twenty-five hotels, one of them costing \$600,000; U. S. Postoffice, cost \$150,000; Public Library, cost \$50,000; Elk's Home, cost \$75,000; Orphan's Home, cost \$20,000; Union Depot, cost \$60,000; Armory and Auditorium, cost \$40,000; a fine, large opera house, two telephone systems having more

than 14,000 city telephone connections; four daily newspapers, two telegraph companies, eight substantial and conservative banks and trust companies with capital stock of \$725,000 and deposits in excess of \$6,000,000.

The assessed tax valuation for 1912, based on one-third of the current valuation, was \$8,387,494. The valuation of Jasper county 1913 on the same basis was \$24,668,397.

The zinc and lead mining industry forms the foundation upon which all other industries and mercantile enterprises of Joplin rest, but the output of these industries and the gross amount of business transacted exceed in value the output of the mines, enormous as it is. There are more than twenty wholesale and jobbing houses, whose trade territory covers a large area, going far beyond the territory peculiar to the mines. The great manufacturing concerns of the United States have their branch houses here and the home manufacturers have an output reaching into the millions. There are more than twenty machinery supply houses and shops in the city and in other lines the manufacturer of explosives, blank books and printing, grain, flour, meal and feed, cigars, ice, bakery products, women's and men's clothing, brooms, manufactured lead and zinc products, cooerage, vehicles, candies and confectioneries, etc., etc., have reached large dimensions.

In all there are about 200 manufacturing establishments in the city, which in 1914 turned out products valued at \$9,747,306, not counting the output of some sixty small shops, which is valued at \$75,000. The capital invested in 1914 in manufacturing establishments amounted to \$15,180,387, of which \$4,624,208 was in grounds and buildings and \$8,025,558 in machinery and fixtures. The number of employes was 2,322, who drew wages amounting to \$1,486,809; the value of the raw material consumed was \$5,588,573.

The largest manufacturing industry in Joplin is the smelting industry with an output valued at \$3,240,862, the others being light, heat and power, valued at \$1,035,754; flour, feed and meal, \$1,148,385; bakery products, \$288,560; candy confections, \$116,180; car shops, \$261,548; cigars, \$171,884; creameries and dairies, \$206,200; foundries and machine shops, \$431,022; grocery sundries, \$280,821; structural iron, \$296,209; printing and publishing, \$249,546; malt liquors, \$110,701; other lines not valued.

The manufactured products of Carthage for 1914 are valued at \$2,970,168 and those of Webb City at \$1,495,941. Both towns are in Jasper county. The most important

product of Carthage is building stone, the output being valued at \$189,373, the other values coming from the products of the foundries, machine shops, furnaces and saddlery, ice and cold storage, planing mills, etc., etc. The values of manufactures in Webb City come from the distribution of natural gas, foundries, machine shops, flour mills, ice and cold storage, packing house products, bakery products, etc., etc. The manufactured products of Jasper county are valued at \$15,222,854.

Jasper County, Missouri, is more famous for its zinc and lead production than for its agricultural resources, yet it is, nevertheless, an exceptionally fine agricultural county. The northern half is more especially devoted to agriculture and the feeding of live stock. Wheat is the important cereal and in consequence a number of mills of large capacity are maintained. The industrial population of the county is so large

that very few if any of the agricultural products cross the county lines to find a market.

The area of Jasper county is 406,400 acres, of which 324,200 acres are in farms with 272,704 acres under tillage. The value of all farm property is \$23,378,608, the land alone being valued at \$16,940,132. The average acreage per farm is 104 acres and the average value is \$7,500; the average value of farm land per acre, \$52.25.

The value of livestock (1910) was \$2,619,149, and the agricultural production of the county (1910) was as follows: Milk, 2,925,217 gallons; cream, 40,594 gallons; butter fat, 36,813 pounds; butter, 780,791 pounds; value of dairy products, \$306,879; value of poultry products, \$334,000; value of honey and wax, \$1,950; value of wool and mohair, \$5,180; value of livestock sold, \$669,735.

The largest crops produced were the following: Corn, 2,006,001 bushels; oats, 364,-



S. C. HENDERSON WHOLESALE GROCER CO.

INTERSTATE GROCER CO.

BRAND-DUNWOODY MILLING CO.

JOPLIN GROCER CO.

JOPLIN CITY MARKET.

JOPLIN, MO.

147 bushels; wheat, 626,714 bushels; flax seed, 24,965 bushels; hay and forage, 39,967 tons, Irish potatoes, 91,344 bushels; nuts and fruits, 28,751 bushels; strawberries, 1,379,715 quarts.

Mill products sold: Flour, 236,536 barrels; corn meal, 1,867,251 pounds; bran, ship-stuff, etc., 5,806,970 pounds; feed, chops, etc., 12,208,697 pounds (1912).

The total population of Jasper county (1910) was 89,673, of whom 32,073 were residents in Joplin, 9,483 in Carthage, and 11,817 in Webb City. The population of Joplin has increased to 45,000 within the city limits and all the other towns have grown proportionately since 1910. The taxable wealth of the county (1913) was \$24,668,897. The county has 119 school districts, 497 teachers, 25,127 pupils, and expends annually \$245,769.32 for teachers' salaries.

At the time of this writing the value of zinc ore is higher than it has ever been in the history of the industry and the greatest activity in mining is now taking place

in the Joplin district. While Joplin has developed industries in other than mining it offers good opportunities in various lines. More smelters are needed to prepare for market the vast quantities of lead and zinc ores produced. It is folly to haul away 35,000 to 40,000 carloads of ore when the finished products could be transported at nearly the same cost. Mineral paints should be manufactured here, as there is no lack of raw material and cheap fuel, cheap electric power, coal and natural gas. Canneries are needed to conserve the surplus of fruit, berries and vegetables grown annually in abundance. Wood working plants will find raw material convenient and a splendid market and there are openings in the manufacture of shoes, clothing and other lines. Twenty miles north of Joplin is a vast coal field employing from 8,000 to 9,000 miners, and surrounding Joplin, say within a radius of fifty miles, are a quarter of a million people who need all sorts of commodities. Ask the secretary of the Joplin, Mo., Commercial Club for particulars.

Port Arthur College

Port Arthur, Tex.—The Story of a High Grade Educational Institution on the Gulf Coast

About the year 1900, the late John W. Gates, well remembered in the financial circles of the country, through his railway connections, became interested in the Texas Coast country and more particularly in the embryo city of Port Arthur, the new struggling seaport on the Gulf. Being the sort of a man he was, an energetic moving spirit which abominates stagnation, he at once instilled new life and vigor into a young but almost apathetic community. He did not confine his activity to administering wholesome advice, but being a man of abundant resource, he demonstrated his faith in the future of the city by building a handsome mansion there for his residence. Next he built a large rice mill for the convenience of the farmers and was instrumental in organizing the First National Bank. In the development of the Gulf Coast oil industry Mr. Gates helped organize the Texas Company and through his influence both the Gulf Refining Company and the Texas Com-

pany located their refineries at Port Arthur. Both of these corporations have grown into gigantic concerns and with them the city grew also.

The destruction of the old wooden pleasure pier at Port Arthur by fire prompted Mr. Gates to promote the construction of a new concrete pier, the finest of its kind on the Gulf coast. The splendid Plaza Hotel owes its existence to his personal efforts and financial assistance. The Mary Gates Hospital was built and endowed by him and dedicated to the memory of his mother. The model dairy farm and the tropical fruit nursery adjacent to Port Arthur were also enterprises undertaken by Mr. Gates.

In 1909 Mr. Gates founded and endowed the Port Arthur Business College, his object being to establish the finest business school in the entire south, "to be operated not for profit, but for the purpose of so educating the young people of the country that they may earn from \$75.00 to \$200.00 per month."

In 1912, for the broadening of the school, the extension of the course and better supervision, the property passed under the control of the Methodist Episcopal church, which supervises its work and partially supports it. In the same year it was incorporated as the Port Arthur College.

The school thus meets two long felt needs: (1) On the part of the community the need of a high grade commercial school to train young men and women for its business needs; (2) on the part of the Gulf Conference the need of a school where the young people of the region can be given a thorough education under Christian auspices. Since the death of Mr. John W. Gates, Mrs. Gates and Mr. Charles G. Gates have been con-

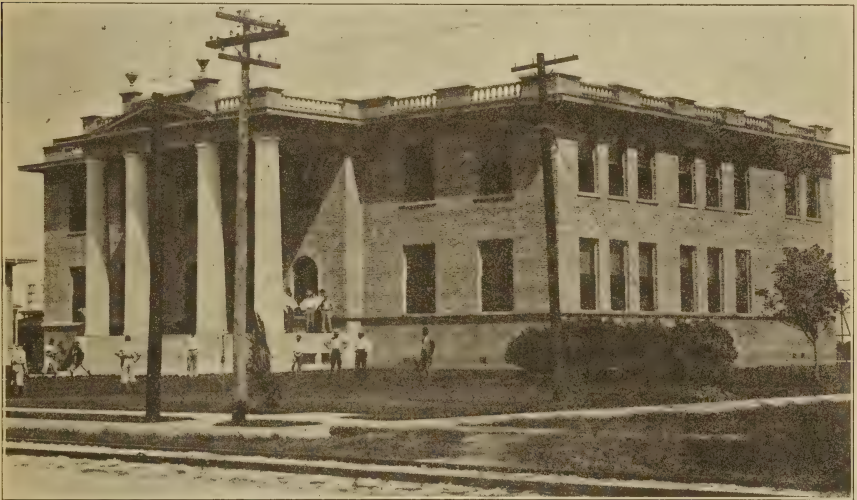
ings, has many windows and is cool in summer.

The Dormitory is a two story pressed brick building with separate wings for the men and for the women. It contains a general reception room, dining room, kitchen, bath rooms, matron's apartments, and the music studios.

The wireless house, store house and servants' quarters are also of brick. The wireless tower is of galvanized steel 180 feet in height.

The president's home was the first house erected on Lake Shore Drive and is one of the most beautiful residences in the city.

As organized, Port Arthur College is a high grade, co-educational institution of



PORT ARTHUR COLLEGE, PORT ARTHUR, TEX.

tinuous friends and benefactors of this undertaking.

The Buildings and Equipments, which are the gift of Mr. Gates, consist of the Administration building, the Dormitory, the President's home, the storehouse and servants' quarters and the Marconi house and wireless tower.

The Administration building is a modern pressed brick building with concrete foundation and pillars, and contains the general office, president's office, the chapel, the college and academic recitation rooms, the laboratories, the business school and the telegraph school. It is lighted electrically and steam heated. It is built with high ceil-

ing, incorporated under the laws of Texas, and seeking to give a thorough practical education under the best conditions. It has a competent faculty, modern and adequate equipment, and is situated in a healthful and pleasant environment. The work of the college is arranged in the following departments:

The College, the Academy, the Business College, the School of Telegraphy, the School of Music, the School of Arts. The College, Academy, School of Music and School of Arts courses are identical with those of any high grade college, and the work has been planned to meet the requirements for affiliation with the University of Texas, the Rice



DORMITORY OF PORT ARTHUR COLLEGE, PORT ARTHUR, TEX.

Institute, Tulane University and the best colleges of the country.

The Business College is being maintained as originally contemplated by its founder. The general collegiate features were added to enlarge its scope and supply educational features originally not provided for.

The Business College has a preparatory course which may be taken by those who are not fully prepared to enter a bookkeeping, short hand or telegraph course immediately on arrival and good opportunity is

afforded to brush up on business English, arithmetic, penmanship, spelling and type-writing. When sufficiently qualified the pupil is advanced to bookkeeping, business arithmetic, banking, correspondence, office practice, stenography, dictation, telegraphy, telegraphic engineering, wireless telegraphy and other subjects essential to a business education.

The City of Port Arthur maintains a most excellent Manual Training School, which, in a measure, may supplement the training



MARY GATES HOSPITAL, PORT ARTHUR, TEX.

offered in the Port Arthur College in cases where a student may wish to specialize in practical mechanics.

Port Arthur, now about eighteen years old, is a city of nearly 15,000 people. It has a monthly payroll of about \$300,000. Two of the largest oil refineries in the world, the Texas Company and the Gulf Refining Company, have their plants here, each constantly enlarging and improving its equipment. The combined capital invested is more than \$110,000,000. The annual export, foreign and coastwise, runs between \$47,000,000 and \$50,000,000, including lumber, oil, grain, mill products, cotton and cotton seed products, packing house products, rice, crude and refined oils, asphalt, sulphur, etc. The harbor is one of the safest on the Gulf Coast and easy of access.

The city is fully equipped with everything essential to a city of its dimensions, including first class hotels, a pleasure pier costing \$200,000, electric street car and suburban service, a splendid public school system, churches of all denominations, large mercantile establishments with great, well selected stocks, public parks, etc., paved streets and sidewalks, good drainage and

sewer systems, electric light and gas plants and pure artesian water.

Port Arthur, on account of its proximity to the Gulf and the constant Gulf breezes is one of the most healthful cities in the United States. Its climate is very moderate during the winter, roses and violets being in bloom practically every month in the year. An occasional 'norther' gives a crispness to the air, necessitating artificial heating for a day or two at a time. The summer is usually cool, due to the delightful sea breeze blowing almost constantly during the day from the lake and gulf and the land breeze which sets in at night.

The people of southeastern Texas and southwestern Louisiana have been very fortunate in securing and having within easy reach a high class educational institution like the Port Arthur College. Very few towns succeed in securing much desired educational institutions, aside from the public schools, until they are half a century old. Thanks to Mr. Gates' kindly interest in the young city, Port Arthur had a complete establishment, well equipped and endowed and in operation before it was twelve years old.



PORT ARTHUR HIGH SCHOOL, PORT ARTHUR, TEX.

Summer Outings in the Ozark Mountain Region

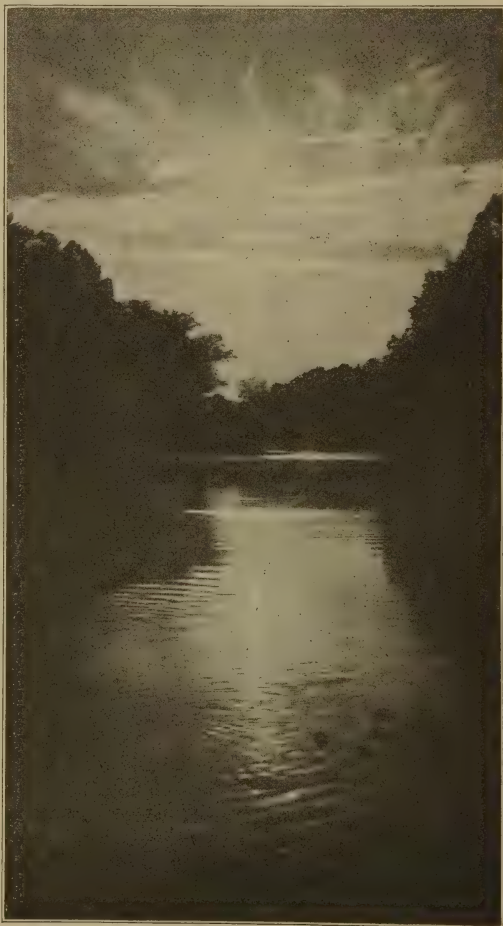
The season of brazen skies and sultry nights, flies and mosquitoes is not far off; neither is that feeling of restiveness which afflicts the denizens of the city about this time of the year. It is the annual awakening of the migratory instinct, the heritage of man from countless generations of ancestors, who lived in the open. The great city is the product of several thousand years of civilization, but through the roar of traffic, the voices of the ancestors are heard in the purling music of the brooks and the rustling of the leaves in the forest and their posterity understand the call. What a blessing it is, to be able for a time, even for a day, to cast aside the cares of business, the drudgery of household work, the glaring refraction of the sun from the dusty streets of the cities and go where the breeze rustles through the leaves, where it is cool under the trees and where one can rest.

Convenient to the cities in half a dozen states and particularly to Kansas City, St. Louis, Memphis, New Orleans, etc., is the great Ozark Plateau, or Mountain Region, a vast triangle of elevated land extending from the Mississippi and Missouri rivers, southwesterly to Red river, in the southeast corner of Oklahoma. The Arkansas river divides it into two parts, the greater part being north of this river. The Kansas City Southern Railway skirts the western edge of this plateau, while the St. Louis, Iron Mountain & Southern Railway traverses its eastern escarpment.

The altitudes vary from 1,000 feet to 2,500 feet, the greater altitudes being in southwestern Arkansas. The whole area is a vast table land, which, in the course of ages has, by the erosion of hundreds of rivers and water courses, been cut into mountains and valleys, hills and gentle slopes and high, comparatively level areas. The greater part of the plateau is of sedimentary origin and underlaid with strata of limestone, but in the southwest corner of Arkansas, notably in Polk, Sevier, Howard and Pike counties are indications of intense

volcanic activity, and in this section are mineral deposits which in time will be mined.

The country in general is hilly, and in places even mountainous, but the elevations are not so great as to exclude from view comparatively large scopes of country. Unlike the Rocky Mountain country, the landscape is not hemmed in by continuous ranges of high verdureless mountains, but rather presents a panorama of exquisite scenery as the journey proceeds. Very few people, even



BEFORE SUNRISE AT NOEL, MO.



ELK RIVER, ELK SPRINGS, MO.

those resident in the towns of the Ozark Region, have any conception of the natural beauty of the landscape, the numerous varied and highly interesting features likely to be encountered while leisurely driving or riding along the roads leading from and connecting the various towns. In the Ozark landscape there is always something beyond the immediate range of vision that is more beautiful than the piece of road already

traversed. During the summer months there is always visible in the distance the deep green of a timbered hill crest, suggesting many scenic possibilities beyond.

Nature was lavish in the Ozarks, creating a vast table land broken by erosion into hundreds of ridges, covered with forest and traversed by a thousand rivulets, brooks and rivers formed by countless springs issuing from the hillsides. From April to October



BOATING ON THE LAKE, SULPHUR SPRINGS, ARK.

the landscape is bedecked with flowers. The damp and shady places are full of violets, spring beauties and ferns, and the hillsides and valleys are resplendent with the dog-wood, haw, wild plum and crab blossoms and hundreds of orchards and berry patches contribute their share to the beauty of the landscape. In midsummer every shady nook is full of ferns and on the spring branches and clear pools are mosses, water cresses and lilies. The forest patches are now at their best and in the orchards a bounteous harvest is in sight. It is the season when Bob White, Cock Robin and the impudent Bluejay are getting the best there is in life; when the big bull frog in the pool and the little fellows of his ilk are vociferous and the hungry bass mistakes a wad of feathers for a new kind of a bug or a revolving spoon for a live minnow. The woods are full of music and even the most sordid soul can be awakened by the cackling of the hen or the crowing of the barnyard cock.

In September and October, while the golden rod and the sunflowers are struggling for possession of the roadside and the cornfields are maturing, the hillsides and valleys are aflame with color as the forest foliage turns carmine and yellow and the maples and oaks stand forth in their glory and everywhere in evidence are the hundreds of

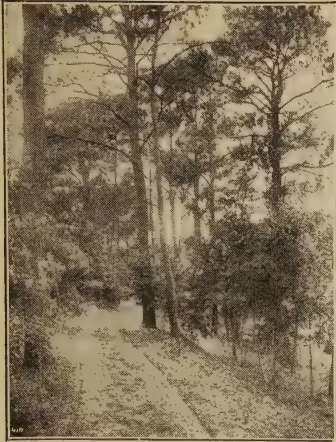
orchards with the trees loaded down with big red apples.

A day in the Ozarks in May or June, along some clear, swiftly running mountain stream, rushing over the clean gravel, is delightful. At the beginning of day, nature illuminates her work with a brilliant mountain sunrise announced by the twittering of the birds in the branches. As the hours pass, the lights and shadows play among the trees and on the rippling waters, bringing out in detail the delicate tracery of the curtains of vines and creepers, running from tree to tree, and later in the day when the birds have ceased to sing, there is the sunset, with its play of colors in carmine, violet, purple, mauve, gold and silver, and later still, on the banks of the river, the song of the frogs, the deep black shadows of the overhanging trees, the streak of burnished silver, the reflex of a golden cloud—beyond, the splash of a bass in pursuit of a careless moth—then inky blackness, and over the distant hills the halo of a rising moon.

Along the western border of the Ozark Region are many places, convenient to the business towns and cities, which are most attractive locations for summer vacations and outings. The hotels of the Ozark



INDIAN CREEK, ANDERSON, MO.



A BIT OF OZARK FOREST.

Region, while generally small, are, as a rule, good and their prices are moderate. Private accommodations can be had in most of the towns. The inhabitants of the Ozark towns are a quiet, respectable class of people, engaged more or less earnestly in fruit growing, poultry raising, the raising of fine live stock and such mercantile and industrial activities as are common to the smaller

towns. Nearly all the towns are situated from 1,000 to 1,600 feet above sea level, where there is pure country air, a moderately cool summer climate, an abundance of fresh eggs, good rich milk and butter, fine fruits and berries, the softest, purest free-stone water and the enjoyment of an outdoor life at a very moderate cost. It is an ideal section of country to which one can take his wife and babies and give them an opportunity to enjoy life, to rest and recuperate. There are nearly a dozen places on the line of the Kansas City Southern Railway where this can be done and in general, it will not cost much more to stop for a month than it does to stay at home.

The towns best equipped to entertain summer visitors are Neosho, in Newton County, Mo., Anderson, Elk Springs and Noel in McDonald County, Mo.; Sulphur Springs, Gentry, Siloam Springs, Rogers, Monte Ne in Benton County, Ark., Eureka Springs in Carroll County, Ark., Mena, Bog Springs in Polk County, and Baker Springs in Howard County, Ark. The passenger department of the Kansas City Southern Railway will be pleased at all times to furnish any desired information concerning rates and accommodations, etc. This information may be obtained by addressing Mr. S. G. Warner, Gen. Passenger Agent, Kansas City, Mo.



ALONG MOUNTAIN FORK RIVER, NEAR MENA, ARK.

The Gulf Coast Region of Louisiana and Texas

A Birdseye View of the Coast Country

The Gulf Coast region, as generally understood, is a strip of country from fifty to seventy-five miles wide, running about parallel to the shore line of the Gulf. In western Louisiana and eastern Texas its northern part contains a pine forest area comprising about one-half of the surface. The southern half is open prairie land extending southward to tidewater. The territory in which the K. C. S. Ry. is more particularly interested comprises Jefferson, Orange and Newton counties in Texas, and Vernon, Beauregard, Calcasieu and Cameron parishes in Louisiana. Eastward of this area are large stretches of prairie lands until the Mississippi River is reached. Southwesterly toward the Rio Grande, the coastal prairies merge into the plains country and change materially in character of soil and climate. The altitude varies from sea level at the Gulf shore line to about 200 feet in Vernon Parish, Louisiana. Twenty miles inland the altitude is twenty-four feet at Beaumont, Texas, and nineteen feet at Lake Charles, La. In the forest area the elevation increases rapidly going northward. The timber lands generally are gently rolling, consisting of broad, shallow valleys and creek bottom, separated by low smooth ridges. The southern edge of this timber area is generally level and merges into the coastal prairies. At intervals these prairies are traversed by low ridges, frequently a mile in width, which are usually covered with a rich, dark, sometimes deep black loam of great fertility, well suited for general farming, for growing semi-tropical fruits and for the production of crops of early commercial truck. The depressions between the ridges are nearly level and are considered splendidly adapted to rice cultivation and are largely put to that use. It has been found that they also produce excellent crops of corn, cotton, sorghum, forage crops, cow peas, sugar cane, etc. The rivers traversing the region are the Calcasieu and Mermeteau rivers in Louisiana and the Sabine, Neches and Trinity rivers in Texas.

Along the streams is found a red or chocolate soil, capable of producing abundantly all the standard field crops, commercial truck and some fruits. All of the prairie country is well grassed and affords good summer pasturage for many thousand head of cattle.

In the forest area there is a great diversity of soils, the extremes as to fertility being a light gray sandy upland and the heavy black bottom lands along the streams. The predominating soils are the gray and dark sandy loams and the chocolate and red lands, mostly uplands, and the dark or black loams and heavier black soils of the river and creek valleys. These soils produce all the standard field crops common to Louisiana and Texas. They respond readily to good cultivation and with crop rotation and the use of cow peas and other legumes, acting as fertilizer crops, yield splendid results. Small farms have been cultivated in this forest area for the last seventy-five years.

In the earlier history of the country the coastal prairies were used almost exclusively as open cattle ranges. Isolated ranches and farms were scattered over an immense area. Farming operations were confined to local needs except near New Orleans, Galveston or Houston, where the crops could be marketed. Near the first two named cities an extensive sugar industry was developed and within the last twenty years rice growing has become the most important agricultural industry.

The Climate and Public Health of the Gulf Coast Region.

The climate is one of the most attractive features about this section of country. The Gulf Coast climate is that of a moderately warm temperate zone. The killing heat of the northern latitudes is not there. Sunstroke is an unknown malady. The winters are never severe, the mercury seldom sinking below the freezing point and never remaining there long when it does. Cattle are wintered on the grass and receive no shelter. This practice may not be good farming, but many carry their livestock in this way. A sharp frost is occasionally encountered and a film of ice be formed on still water, but the ground never freezes and field work can be done all winter. Bright sunshine prevails about 300 days in the year and there need be no idle season. Almost every day in the year can be made a working day. It is a climate free from extremes. It has more warm days than the climate of northern states, but few, if any, of the days are ever as hot as those of a northern summer.

The average monthly and annual temperatures at Lake Charles, La.—and this holds

good for Beaumont, Texas, also—during a period of twelve years, as recorded by the United States Weather Bureau, are as follows: January, 51.9 degrees; February, 53.9; March, 59.6; April, 67.4; May, 73.8; June, 79.9; July, 89.9; August, 80.6; September, 77.2; October, 68.7; November, 59.3; December, 53.5. Annual average, 67.2 degrees.

The prevailing Gulf breeze tempers both the summer and winter seasons to a very marked degree. During the summer months shortly after sunrise a fresh wind starts inland from the Gulf of Mexico and continues throughout the day and late into the night. These winds appear in March and disappear in November, being most pronounced from May to October, when they extend northward to the Dakotas. They are cool, pure, fresh and invigorating and add much to the comfort of the residents, and attract many people from the interior, who regard the coast as a very pleasant summer resort. The winter attractions are such that thousands of visitors come from the northern states and remain three or four months.

The annual rainfall varies from forty-five to fifty inches and the distribution is especially favorable for crop production throughout a long growing season. The average distribution, covering a number of years, is as follows: January, 4.31 inches; February, 3.51; March, 3.98; April, 4.62; May, 5.84; June, 4.25; July, 2.59; August, 2.68; September, 7.72; October, 6.87; November, 5.93; December, 5.35. Total for a year, 46.91 inches.

The rainfall record of Beaumont, Texas, for 1912 is as follows: January, 2.77 inches; February, 3.31; March, 3.32; April, 9.37; May, 9.96; June, 4.32; July, 6.15; August, 6.12; September, 0.19; October, 1.91; November, 1.17; December, 13.39. Total for the year, 61.98. The rainfall for the year was above the average for twelve years, which was 48.75. It was the heaviest since 1905, when it was 62.76. In 1902 it was 63.65 inches.

Public health is exceptionally good in the Gulf Coast region. The death rate per thousand inhabitants in the city population of the United States is 19.6. In Beaumont, Texas, it is 12.8, in Lake Charles, La., 14, from which 1.5 can be deducted for death resulting from industrial accidents. Measles, whooping cough and scarlet fever are rarely heard of and the same should be said of bronchitis. Virulent fevers of the typhoid type, diphtheria and children's diseases common to cold climates occur rarely and are not severe. Malaria is found in some locali-

ties occasionally, but is not a serious ailment. The death rate per thousand of various diseases in Beaumont, Texas, for 1905 is given as follows: Pneumonia, 1.04; United States, 1.91; consumption, 1.45; United States, 1.90; heart disease, 0.85; United States, 1.34; kidney diseases, 0.25; United States, 0.83; bronchitis, 0.05; United States, 0.48; diphtheria, 0.05; United States, 0.53; typhoid fever, 0.10; United States, 0.33; la grippe, 0.10; United States, 0.23; measles, none; United States, 0.13; whooping cough, none; United States, 0.12; industrial accidents, etc., 1.45; United States, 0.46; scarlet fever, none; United States, 0.11; malarial fever, 0.80; United States, 0.08.

Field Crops of the Gulf Coast.

Contrary to expectations the newcomer in the Gulf Coast region will find after a stay of a few days that he is not invited to venture into untried fields of endeavor, to hazard his means on doubtful enterprises or waste his energy in difficult pioneering work. While not farmed extensively at any time in the past, there have always been farms in cultivation and agricultural operations have been carried on for more than seventy years, and many of the existing farms have been tilled continuously. The new settler is not put to the necessity of learning the methods of cultivating strange crops or doing unprofitable experimental work. Nearly all the northern field crops are grown or can be grown profitably in the Gulf Coast region and the soil is tilled in the same way—the only difference being that the southern growing seasons are longer and that the winters are milder. The new settler's past experience is as valuable to him in southern Louisiana and Texas as it is in Iowa, Illinois or Ohio. On the Gulf Coast farm he will find nearly all the crops cultivated in the northern states and several others peculiar to more southerly latitudes, like rice, cotton, sugar cane and several varieties of fruits not cultivated in the north.

The Gulf Coast is practically a new field open to development, a country of splendid opportunities yet thinly settled, in which more can be done on a small working capital than in the more thickly settled parts of the country. It is easier to own a farm outright near the Gulf Coast than it is to rent one elsewhere and the attention of prospective homesteaders is called to the fact that the opportunity is here for the person with small capital seeking a home and occupation, as well as for those of larger means who may plan agricultural or industrial enterprises on a more extensive scale.

The Corn Crop.

Because neither Louisiana nor Texas have, in former years, made offerings of corn in the northern markets, some people have naturally conceived the idea that corn cannot be successfully grown in these states. There is no basis for such an opinion, because the actual production shows otherwise. The quality produced, as a rule, is excellent and the yield varies from twenty-five to seventy-five bushels to the acre. On the rich bottom lands of the Sabine, Neches, Calcasieu rivers and their numerous tributaries and on the black loamy ridges traversing the prairie region from forty to eighty bushels per acre are considered an ordinary yield. Where crop rotation, with a view to fertilization, is practiced on the uplands, in the forest area, similar results are obtained. There is a greater diversity of soils in the Gulf Coast region, on which this crop is grown and also a difference in the yield on the different kinds of soils, but the maximum production per acre of the north is easily duplicated on most of the southern soils. Occasionally the crop has been produced twice on the same soil, the same year. The tendency in Louisiana and East Texas has been to produce sufficient corn for home consumption and to rely on other crops for ready money returns.

The greatly improved transportation facilities have put stock raising on a better financial basis, resulting in a large increase of farm animals and a greater corn and forage production. The corn production of Louisiana, for 1912, is given at 25,455,086 bushels, valued at \$15,035,489. For 1913, the crop is estimated to amount to 60,000,000 bushels or more.

Grain and Forage Crops.

Wheat for flour was grown more or less extensively in the earlier history of the country and there was a time when flour mills were not uncommon. Most of the flour mills disappeared at the close of the Civil War. The milling processes in the northern states had been so perfected that it was found more expedient to buy the northern flour than to mill the home grown wheat. During the past fifteen or twenty years many new mills were built in Arkansas, Central Texas, Oklahoma and Louisiana, some of which turn out flour while others manufacture corn products. The greatest development in the milling industry is connected with the rice crop, and this has reached enormous dimensions.

Wheat, oats, barley, rye, etc., are grown extensively to obtain winter pasturage and grain in the sheaf and are produced at a time when the land would otherwise lie idle.

Oats, sown in October, are pastured from December to March and harvested in May. The crop is mown while the grain is still in the dough. Though seldom threshed, an oat crop will yield from thirty-five to sixty-five bushels of grain to the acre. Sheaf oats will yield from two to three tons to the acre. Oats are also grown in rotation with cotton, corn and cow peas. Red rust-proof oats, vetch, red clover are often sown together and cured together. Two cuttings are usually made before letting the oats go to seed. In this way two crops of hay and one of matured grain are obtained; barley, wheat and rye are often grown in the same manner.

All the sorghums, both saccharine and non-saccharine, including the several varieties of broom corn, flourish from April until December or January. Of the sorghums, after the first cutting, a second, third, and sometimes a fourth crop comes up from the suckers. The Early Amber and the Early Orange are preferred varieties for soiling. White and Yellow Milo-Maize, Jerusalem Corn, Kaffir corn, etc., are grown more or less extensively and yield from ten to fifteen tons of fodder and considerable grain.

Every hay crop grown in the northern states has been produced near the Gulf Coast, but practical experience has demonstrated the folly of growing some of them, when legumes can be grown which act as fertilizers, yield double the quantity of hay and are worth per ton, in the nearest market, double the money. In the Gulf Coast prairie region the luxuriant growth of the native grasses makes excellent hay. In the forest area the native growth affords good pasturage about nine months in the year, and when the timber is removed this grass will make hay. Bermuda grass makes splendid pasturage, is a complete ration in itself and is good eight months in the year. On fertile soils it makes several tons of superior hay. Crab grass, Italian rye grass, teosinte, red top, rescue grass, etc., are used as hay grasses.

The cow pea, a forage plant and soil fertilizer, yields about twenty tons of green forage or two or three tons of dry hay per acre. One hundred pounds of cow pea hay are equal to 150 pounds of timothy hay when corn is fed with them as a concentrate. The Soy and velvet bean are grown extensively for hay and the Spanish peanut yields about two tons of hay per year. These, like the cow peas, are sown in the corn crop immediately preceding the last cultivation. Japan clover, a volunteer crop, makes from one to two tons of good hay and affords ex-

cellent pasturage until June, being cut in October. Red clover and crimson clover grown by themselves or mixed with oats afford about two good crops of hay, one in April or May and one in July.

Alfalfa and the various clovers, where cultivated, have done well. Their cultivation has not been extensive, but with the development of the stock raising industry a larger production of this class of forages will naturally follow. The Louisiana crop report for 1914 shows a production of 347,910 bushels of peanuts, valued at \$325,619; 1,907,094 bushels of oats, valued at \$1,036,121, and 328,004 tons of hay, valued at \$3,344,120.

Stock Raising.

On the coastal prairies cattle raising, as a business, has been carried on since the arrival of the first settlers. In the woodlands stock raising has always been part of the ordinary farming operations. More recently stock farming has become established on the prairie farms and the breeds of live stock have been greatly improved. As a matter of fact, the production of live stock of all descriptions has been greatly increased in the country traversed by the K. C. S. railway. The enormous increase in forage and corn production was made necessary by the increased interest in stock raising and the improvement of the various kinds of live stock now raised on the farm.

Poland China, the Berkshire, Red Jersey. Duroc and Essex breeds of hogs can now be found on many farms, and there are a number of breeders in southern Texas and Louisiana with herds as good as any found elsewhere.

Thousands of cattle are now annually fed at the cottonseed mills and shipped to the northern and western markets. Cottonseed meal and hulls, rice bran, polish and shorts, cheap molasses from the sugar houses and other forage provide superior feeding rations. Improved breeds of the dairy type—Herefords, Durhams, Jerseys, Polled Angus and Devons—are rapidly replacing the older breeds.

Pure-bred northern cattle and also other improved stock for breeding purposes have been introduced all over the South, Texas and Louisiana included. It has also been demonstrated by practical feeding tests that northern-bred cattle can be taken to Louisiana, fed there systematically and be made to top the Chicago market. One carload sent there was sold for 40 cents more per hundred than any other carload sold there that day, and within 10 cents of the highest price paid for any cattle during the preceding week. This test shipment demonstrated that southern Texas and Louisiana

can enter the market any day with well-bred beef cattle and become a strong competitor with the North in beef production.

A large majority of the horses have been raised at home. Mules have been raised in sufficient number to demonstrate that with proper care and attention the finest and largest can be raised here. The flocks of sheep have been improved and wool in considerable quantity is now annually shipped from De Ridder and Leesville in Louisiana.

The engrossing pursuits of the first settlers in southwestern Louisiana and southeastern Texas were farming and stock raising. The farming operations were confined to localities where navigable water courses or passable roads made it practicable to transport the product of the farm to market. Before the advent of railway transportation cotton of necessity was the only crop which could be relied on to furnish an immediate cash income. It is a commodity which can be stored an indefinite length of time, can withstand rough handling, is not easily damaged by heat, cold or rains and commands spot cash when offered for sale. The cotton bale was the medium through which communication with the outside world was maintained and which provided the comforts as well as the necessary commodities not produced on the farm or plantation.

Cotton, in the olden days, was always a friend in need, and some cotton is grown with other crops on farms where it was formerly the exclusive crop.

The Cotton Crop.

Cotton, as a ready-money producing crop, is to Louisiana and Texas as corn is to the northwestern states. It is one of the best-paying field crops which can be grown with little trouble and expense. One man can attend to the cultivation of sixty to one hundred acres aside from the chopping out and picking. Cotton yields a revenue of \$20 to \$60 per acre and the cost of production is approximately as follows: Seed, 50 cents; planting and cultivating, \$3.00; picking, \$3.00; ginning, \$4.00; freight, commission, insurance, etc., \$3.75; total cost, \$14.25. The acre on which this expense account is given produced a bale of cotton. It was sold at the rate of 11 5-6 cents a pound, amounting to \$64.71. The seed was sold for \$16.00. The crop brought in a gross price of \$80.71. Minus the expense account, itemized above, the net profit was \$61.46. These figures are easy to duplicate in many localities along the Gulf Coast, on any of the river bottom lands, but the remarkable feature about this bale of cotton is that it was one of four crops produced and harvested from the same acre of ground within the space of

twelve months. These four crops were sown and harvested as follows: Beans and beets planted October 1 and harvested February 1. Cotton planted May 1 and harvested September 1. Cow peas planted September 15 and gathered December 15. Potatoes planted January 1 and dug April 10. The land was then again planted in cotton.

A cotton crop from twenty acres, near Beaumont, on which commercial fertilizer costing \$2.50 per acre had been spread, yielded a little over twenty-eight bales. The total cost of production was \$641, or \$32.50 per acre. The gross income was \$1,547.80, or \$77.39 per acre. The net receipts amounted to \$44.89 per acre.

The yield, of course, varies with the kind of land used and cultivation the crop receives. On the Gulf Coast prairies the river bottoms, etc., the yield runs from half a bale to one and one-quarter bales; in the timbered areas from one-third to three-fourths of a bale. Formerly cotton was the exclusive crop grown on many farms, but within the past decade the tendency has been to diversify crop production. The total production is greater than in former years because the number of farms has increased, but many farmers now produce forage crops, corn, potatoes, grain, cow peas, etc., which formerly were grown in less quantity.

The production of cotton in Louisiana, in 1912, amounted to 368,217 bales and was valued at \$18,200,439.

Rice Culture.

The actual cultivation of rice is identical with that of wheat, the only difference being that rice is irrigated and wheat, ordinarily, is not. Land, used for rice cultivation, must possess a subsoil sufficiently tenacious to hold water and be firm enough to sustain the machinery used in harvesting. The land must be susceptible of good drainage and the clay must be near enough to the surface to dry out in a few days after the water is drained off. It requires from twenty-four to thirty inches of water to supply the quantity absorbed by the soil, evaporation and used for irrigation during the growing period of rice, but the quantity actually needed is governed by the rainfall accruing during that time. The drainage of a rice farm is very important, as upon the prompt removal of the water depends the plowing, the sowing and harvesting, and frequently the planting of other crops after harvesting.

One man can easily handle 100 acres of rice land and some handle 150 acres. The

following figures present a fair average of the cost of growing a rice crop: Plowing, per acre, \$1.50; preparing and seeding, per acre, \$1.50; seed, \$1.25; water rental, \$6.50 (two barrels of rice at 3.25, frequently less); harvesting, \$1.25; threshing, \$3.50; marketing, total, \$15.50; average yield, ten barrels, \$32.50; profit, per acre \$17.00.

The yield of this crop occasionally runs as high as twenty-five barrels per acre and the price has been as high as \$5.00 per barrel. As with other grains the yield per acre and the prices fluctuate more or less and the profits vary from year to year, though the net profit has always been much greater than could be obtained from a similar acreage in wheat or other grains.

The total rice crop of the United States for 1914 is reported at 6,128,576 bags of four bushels or 180 pounds. The total acreage this year was 689,900 acres. The Louisiana acreage is given at 333,824, with a total yield of 2,872,440 bags, an average of 8 6-10 bags per acre. The Louisiana production consisted of 44 per cent Honduras, 28 per cent Japan and 28 per cent Blue Rose rice. Southwest Louisiana had 100,737 acres in Honduras, 102,488 acres in Japan and 83,990 acres in Blue Rose rice.

Texas had 168,167 acres of Honduras, 42,485 acres Japan and 26,214 acres Blue Rose rice. Total acreage, 236,866 acres, with a total production of 1,861,521 sacks.

In the earlier history of rice planting, the planter raised rice and nothing else. There was a period of several years in which the product of one acre of rice would readily pay for the product of several acres in other crops, like corn, oats or hay. The forage crops have since then become more valuable and more general crops are now grown on the rice farms.

Sugar Cane Cultivation.

American sugar cane cultivation had its origin in Louisiana in 1751, when it was introduced by the Jesuit fathers. The first commercial sugar crop was grown by Etienne De Bore in 1794 or 1795. All of the earlier sugar plantations were located on the alluvial lands convenient to New Orleans, but later the industry spread over western Louisiana and thence to Texas.

Sugar cane is a gigantic grass, often reaching a height of ten to fifteen feet. It grows up straight, but at maturity will lean by reason of its weight or of wind pressure. Its roots are fibrous and lateral, stretching out in all directions, and do not penetrate the soil to any depth. The round stalk is divided by joints from three to ten inches apart, from which issue the leaves on al-

ternate sides, and at the base of each leaf is a bud or eye from which the future cane is grown. In the planting of the cane the following method is usually pursued: After deep breaking, followed by pulverization, rows from five to seven feet wide are laid off and thrown up into high ridges. The crest of these are opened with a double mouldboard plow and into this opened furrow stalks of cane, one to three, are placed in continuous lines and carefully covered. From each bud on the cane planted comes a young shoot, growing rapidly into a continuous stand of crowded cane. The world's cane crop is produced by planting the entire or portions of the stalk raising young plants from the eyes or buds on each joint. Cane replanted every three or four years produces an average of about nineteen tons per acre. The cane carries about 11 to 12 per cent of sugar, yielding, per ton, about 170 pounds. At the sugar houses \$3.00 per ton is the usual price paid, the average income being about \$60.00 per acre.

The area devoted to the cultivation of sugar cane in Louisiana is about 300,000 acres and the yield of sugar cane products in an ordinary year is about 360,300 tons of granulated sugar, valued at about \$28,822,000, and 23,727,735 gallons of syrup, valued at \$6,818,000, showing a total value of \$35,640,000. There are in operation 225 or more sugar houses nearly all of which are located in the central and southern parts of the state. In Texas the sugar-making industry is confined to the lower Brazos valley, where some 20,000 or 30,000 acres are devoted to the cultivation of sugar cane and several large sugar houses are located.

Nearly every farmer in Louisiana, southern Texas and southern Arkansas grows sugar cane for manufacture into syrup, both for home use and for sale. This industry has assumed large proportions and it is estimated that over half a million barrels are annually produced outside of the sugar belt proper. Patches of sugar cane, from the fraction of an acre to ten, fifteen and twenty acres, are found on almost every farm. The syrup is manufactured on a small scale with an inexpensive outfit, and a syrup, containing all the sugar in the cane, is produced which sells at 50 to 60 cents per gallon, the average production being 400 to 600 gallons per acre, yielding a revenue of \$200 to \$300 per acre. The farmer makes his cane syrup with the sugar in it and it is superior to any other syrup in the world.

Tobacco Culture.

Tobacco has been grown in Louisiana and Texas for longer than a century, the produc-

tion being almost entirely for home use. The famous "Perique" tobacco, grown on the alluvial lands of St. James Parish, Louisiana, has been a commercial crop for more than fifty years, the annual production being about 100,000 pounds. This tobacco owes its excellence to the peculiar manner in which it is cured and prepared for market, being practically cured in its own juice. During the past twenty years much systematic experimental work has been done in Texas and Louisiana on part of the National Government and by individuals to develop a standard trade quality of tobacco and to encourage its production in commercial quantity. The finer Cuban leaf and filler tobacco, grown from Cuban seed, and the Yellow Leaf tobacco and White Burleigh, which have been grown for some years, have yielded excellent results. In north Louisiana as much as 1,600 pounds per acre of Yellow Leaf have been produced, and in Nacogdoches County, Texas, 1,321 pounds. In South Louisiana and Texas (in Orange County), with cigar types of tobacco, the yield has reached over 2,000 pounds. Two crops a year can be obtained from the same planting. This is accomplished by leaving a sucker in the axil of the crown leaf when topping the plant. When the leaves of the first crop are gathered the old stalk is removed and the young sucker soon takes its place, and with a favorable season makes nearly as large and fine a crop as the first one.

Mr. L. H. Shelfer, formerly United States tobacco expert cultivator in Texas, raised on the United States Experiment Farm in Orange County, Texas, 2,000 pounds of tobacco in the open field on less than two acres, for which 65 cents per pound was offered and refused. Mr. Shelfer found that he could raise Cuban cigar wrapper tobacco in the open on the Gulf Coast without the expense of artificial shading which is used in Florida and other sections. The land will produce from 800 to 1,000 pounds per acre, getting from 65 to 75 per cent wrapper, which will bring as good a price as the shade-grown wrapper. The climatic conditions make a rapid growth that produces a thin, tough wrapper with all the qualities required for a high-grade cigar.

The Orchards of the Gulf Coast Region.

The Gulf Coast Country is essentially one of diversified crops. Nature has so provided, but the tendency among men has been to specialize and hence we have an enormous rice acreage, great sugar plantations, large cotton plantations, large stock pastures all of which have proven profitable. The man

who wants a large farm can have everything to his liking for any kind of farming operations he may desire to engage in.

Fruits of one kind or another are found on nearly all of the older farms, but until within recent years very little fruit was grown for the market. Many varieties produce satisfactorily. Apples, particularly the late varieties, are of doubtful value and the same may be said of raspberries, gooseberries and a few other fruits.

Peaches grown commercially in Texas and Louisiana, on the upland soils, are among the finest and are also the earliest which reach the great markets in the north. Late blooming varieties seem to be more satisfactory than the earlier varieties and apparently are more certain to yield fine crops. More crops per tree and more extra early crops can be made here than anywhere further north. The money value of an acre in peaches, like the Mamie Ross or Elberta varies from \$100 to \$250 if intelligently handled and marketed. The trees begin to bear about the third year. In the fourth year and thereafter a commercial crop is expected.

Plums are indigenous to the country. If good shipping varieties are selected, they are profitable and should yield, to the grower, from \$100 to \$250 per acre. Several of the Japanese varieties, and hybrids of Japanese and native American plums have yielded splendid financial results. Several wild varieties are found in the forests near the streams. An income of \$1.00 per tree is ordinarily obtained.

Pears of all varieties are subject, more or less, to blight in Texas and Louisiana. They are, however, grown extensively, and are, in this climate, most prolific bearers. If properly sprayed, they are easily kept in good health and are profitable. They yield from 100 to 300 bushels to the acre, selling ordinarily for from fifty cents to one dollar per bushel.

Figs grow well on all sorts of soils and until within the last three or four years were grown solely for home consumption. Most of the varieties heretofore grown were too tender to transport any distance. The fig has now become a commercial fruit in Texas and Louisiana, the Magnolia fig being the preferred variety. They are usually planted in rows fifteen feet apart and twelve and one-half feet apart in the row. From three to five year old trees will generally average about 30 to 35 pounds of figs per tree per season, with two hundred or more trees to the acre. They begin to bear fruit the first year after planting, bear fairly well the second year, and about the third year

yield a money revenue of \$100 to \$125 per acre, provided the orchard is convenient to a larger city, where they usually find a ready sale. Most of the figs are now grown on five year contracts with fig canneries of which there are a number in Texas and Louisiana. The cost of an acre of figs is given as follows: Land, \$30; plowing, harrowing and discing, \$15; 193 trees at 12 cents, \$23.16; labor for planting, \$3.47; pruning, cultivating, \$20; total, \$91.53. This is on heavy Gulf Coast prairie sod, with a cannery convenient. One and one-third acres near Alvin, Tex., containing 400 fig trees yielded, for four years, an income of \$350 to \$400 per year. At the present time fig canneries are operated at Bon Ami, La., and Beaumont, Tex.

Satsuma Oranges—The hardy Japanese Satsuma orange, budded on the citrus trifoliata stock, the only deciduous orange tree known, has proven itself capable of withstanding the ordinary winter frosts of Southern Louisiana and Texas. It sheds all its leaves in October and remains dormant until the middle of April, differing in this respect from the tropical varieties, which retain their foliage all the year around. The fruit of the Satsuma is a fine merchantable orange, maturing in October, and is the first in the market. In the vicinity of Beaumont, Texas, and Lake Charles, La., 150 orange trees are planted to the acre, the trees costing thirty cents each, and the cost of an acre, including land, trees and labor will not exceed \$75. They generally bear the second or third year, and at five years usually bear from 800 to 1,000 oranges. A Satsuma orange orchard, five years old, is capable of yielding a money return of \$500 to \$1,500 per acre. A very severe freeze, a very unusual occurrence, may blight the limbs back to the trunk. When pruned back to the live wood, the trees throw out new sprouts and bear the succeeding year. The Louisiana Sweet, the Dugat orange yield well, and the same may be said of the Grape fruit or Pomelo, the Kumquat and the Ponderosa lemon.

Grapes grow wild near all the streams fifty miles north of tide-water. Most of the domestic varieties common to the United States do well. Produced in moderate quantity they are generally profitable. Maturing at a time when the markets are full of fine peaches, plums and other fruits they enter into competition with these, but if converted into jellies or unfermented grape juice they are much in demand.

Strawberries have proven highly profitable where systematically cultivated. As this crop comes in extra early and when nearly

all other fruits, except apples and oranges, are gone, very good prices are paid for it. The berries are shipped northward frequently in January, February and March, and yield about \$150 per acre, though incomes of \$250 to \$400 are obtained every year. Blackberries grow wild in all parts of east Texas and western Louisiana and along the streams the wild dewberry is a common plant. The cultivated varieties of both families do splendidly on all sorts of soils and are generally very profitable. The net profit usually runs between \$100 and \$300 per acre.

Pecans, English Walnuts, etc.—There are few streams in Texas and Louisiana along which a more or less abundant growth of indigenous pecan, hickory or walnut trees is not found. Among the pecans are several varieties, which, by reason of the thinness of their shells, the large and splendidly flavored kernel, are esteemed above all others. The finest of these have been developed by budding and grafting into an orchard tree, and during the last fifteen or twenty years they have been systematically cultivated and several large orchards have been planted in Louisiana. Pecan trees adapt themselves to and thrive on a wide range of soil. Planted on upland the budded trees begin to bear about the fifth year; on the heavy bottom soils about the seventh or eighth year. They are generally planted from thirty to fifty feet apart, according to the kind of land used. At forty feet apart 27 pecan trees are planted to the acre, which, when bearing, yield an income of \$6 per tree or \$162 per acre. The wild varieties bring from three to six cents a pound, while the cultivated improved varieties bring, at wholesale, from twenty to fifty cents per pound. Budded or grafted trees, one to two years old, are generally sold by the nurseries for \$50 to \$100 per hundred trees, and sometimes at higher figures. The black walnut is more valuable for its timber than for its nuts. Its abundance, however, shows that the English and Japanese varieties can be successfully grown for their valuable nuts. The best known varieties of cultivated walnuts are the Rush, Franquette and Santa Rosa. The Chestnut family is represented in the Chinquapin and the Filbert in the wild hazel, showing that these excellent nuts can also be grown. The almond is a member of the peach family and will grow wherever the peach does. Only the pecan has been planted in commercial orchards, but Japanese chestnuts and other cultivated nut trees are found on many farms. Several varieties of Japanese persimmons have been planted extensively within the past ten or

fifteen years and now appear in the northern markets.

The Commercial Truck Garden of the Gulf Coast.

The Kansas City Southern Railway is a north and south line splendidly equipped for handling perishable goods. It hauls vegetables, fruit and poultry twelve months in the year, reaching as far eastward as Buffalo, N. Y., as far north as Canada, and as far west as Denver, and beyond. The northern markets consume enormous quantities of fruits and truck grown in Louisiana and Texas, and from fifteen to twenty thousand carloads are transported annually by the various railways reaching this territory.

The essential condition, in the successful management of a commercial truck farm, is the proper provision for the marketing of the crop. It is important to produce either truck or fruits, in commercial quantity and to that end, the grower must produce the quantity, by himself or in combination with other truck growers, that is to say, co-operate with a fruit and truck growers' association.

In this section of the country a truck farm should be operated every month in the year and the soil should be kept busy continuously. The grower should plant something and have something to sell every month in the year. In January transplant onions, shallots and cabbage; there should be ready to sell, strawberries, cauliflower, cabbages, beets, radishes, spinach, peas and some potatoes; in February plant beets, mustard, leek, peas, beans, potatoes and early corn; strawberries, cauliflower, cabbages, beets, radishes, spinach, peas and some potatoes should be marketed; in March, plant beans, squashes, melons, okra, potatoes, corn, sorghum and millet, market the same crops as in February; in April all tender vegetables may be sown and plants from the hot beds, tomatoes and peppers he set out, also plant sweet potatoes, millet, corn, beans and okra; the sales from the farm will be the same as in March; in May most of the vegetables will have been sown, but where potatoes, onions and other crops have been taken off, corn, melons, cucumbers, squashes, pumpkins, etc., may be planted, also some varieties of cabbage, late Italian cauliflower, sweet potatoes, cow peas, sorghum and black-eyed peas; the sales will be the same as in April, with cucumbers, potatoes and cape jasmine buds added; in June plant and sow the same as in May; the sales will be as in May, with cantaloupes added; in July plant bush and pole beans, corn, sweet potatoes, millet,

broom corn, cow peas; plant cabbage and cauliflower seeds in cold frames and for the fall garden sow cow peas; the sales will consist of figs, hay and many of the crops above mentioned; in August, plant carrots, celery, potatoes, millet and peas; the sales will be the same as in July; in September plant early peas, beans, parsnips, salsify, onions, kale and spinach; set out cabbage, etc.; the sales will be the same as in August with beans added; in October plant onions, marrowfat peas, cow peas, salsify, and oats. Strawberry plants should be set out this month, but planting can be continued until April. The October sales will consist of figs, hay, oranges, beans, turnips, radishes, etc. In November plant cabbage, spinach, onions or oats, clover, alfalfa, lettuce, turnips and radishes; the sales will be the same as in October, with strawberries added. In December plant peas, carrots, cabbage, radishes and parsley and, late in the month, potatoes; all kinds of vegetables will be marketed in December.

The money yield per acre, as obtained from the average fruit and truck farm in Texas, one year with another is as follows:

Irish potatoes, first crop, \$80 to \$250; second crop, \$100 to \$150; March potatoes, \$3.50 per bushel; April potatoes, \$2.00 per

bushel; May potatoes, \$1.25 to \$1.50 per bushel; sweet potatoes, \$50 to \$150; onions, \$100 to \$400; Texas Bermuda Onions, \$200 to \$400; cabbage, \$100 to \$300; two crops; cauliflower, \$300 to \$1,000; tomatoes, \$100 to \$300; asparagus, \$250 to \$450; snap beans and table peas, \$100 to \$300; twice and three times a year; strawberries, \$150 to \$400; blackberries, \$100 to \$300; dewberries, \$150 to \$250; peaches, \$75 to \$250, varying with age of orchard and date of ripening; grapes, \$100 to \$250; plums, \$100 to \$250; pears, \$75 to \$150; figs, \$100 to \$250; watermelons, \$50 to \$150; cantaloupes, \$50 to \$150; lettuce, \$75 to \$150; radishes, \$150 to \$400; peppers, chilli, bullnose and tobacco, \$100 to \$300; celery, \$300 to \$500; pecans, \$200 to \$400; English walnuts, \$200 to \$400; Satsuma oranges, \$200 to \$1,000; Cuban Leaf Wrapper tobacco, \$85 to \$400; ribbon cane, open kettle syrup, \$100 to \$200; peanuts, \$50 to \$75, with one or two tons of hay worth from \$10 to \$15; Cape Jessamine buds, \$200 to \$250, etc., etc.

With proper care it is not difficult to raise any of these crops; the location of the truck farm with a view to shipping facilities and the co-operation of other truck and fruit growers is the essential consideration in this branch of agriculture.

Greater Kansas City

Interesting Information Compiled and Issued by the Commercial Club

Kansas City (and in this are included Kansas City, Mo., Kansas City, Kas., Independence, Mo., and Rosedale, Kas., one industrial unit with the same telephone system and the same street car service) has a population according to the last directory estimates (which uses the multiplying factor of $1\frac{1}{4}$) of 512,741.

Kansas City has 130 schools, elementary and high, in which over 60,000 children are enrolled.

The new high schools, one just opened and one building, are models for the country. Their cost is about \$625,000 each.

Over 10,000 children receive instruction in the manual training and domestic science departments. More than 1,500 teachers are employed in the public schools. Three thousand children are enrolled in the kindergarten departments.

The Public Library contains over 140,000 volumes and last year circulated 392,814 volumes.

Kansas City has 336 churches represent-

ing practically every religious denomination.

Kansas City covers $75\frac{1}{4}$ square miles of territory.

Eighty per cent of Kansas City's population is native born. Ninety-one per cent is white.

The annual bank clearings of Kansas City are \$2,850,000,000.00. The total resources of Kansas City's banks are \$175,000,000.00. Kansas City is National Reserve Bank No. 10. The capital of the Reserve Bank is \$5,500,000. The Reserve Bank Territory comprises all of the states of Nebraska, Wyoming, Kansas and Colorado, the northern parts of New Mexico and Oklahoma, and the western part of Missouri, a total area of 509,649 square miles, with a population of 6,300,000 (Federal census of 1910). The natural products of this territory during 1913 were \$1,642,803,000.

Kansas City is a manufacturing city possessing over 1,200 factories. Kansas City stands 16th in population and 10th in manu-



KANSAS CITY, MO., VIEW FROM ELEVENTH AND MAIN STREETS, NORTHEAST

facturing. Kansas City established more factories in the five years census period just passed than any other city in the country except New York, Chicago, Philadelphia, Detroit and Cleveland. Over 40,000 employees work in the factories of Kansas City and they support 100,000 people.

The factories of Kansas City employ an aggregate capital of over \$100,000,000. The product of the factories of Kansas City is \$250,000,000 per year. In the year 1913, twenty-four new factories were established in Kansas City and seven new jobbing and wholesale houses.

The total new investment in industrial enterprises during the year was $5\frac{1}{4}$ million dollars; of this sum $3\frac{1}{4}$ million dollars were required by local institutions to provide for additions necessitated by their increased business.

Kansas City is as far West as raw material can be economically shipped for manufacturing, and as far East as the finished product can be economically obtained by one-half of the United States.

Kansas City by virtue of her remarkable geographical location, controls the greatest and richest territory on the face of the globe. All of the great Trans-Mississippi Territory, comprising 24 states out

of a total of 48 in the Union, can be served more economically from Kansas City than from any other point. Over 25 per cent of the population of the United States resides in the territory of which Kansas City is the natural controlling center and which is the most rapidly growing territory in the United States.

Kansas City is the second largest railroad center in the United States, being served by 16 trunk line systems, and 32 distinct subsidiary lines. Two hundred and sixty passenger trains carry an average of 28,000 passengers in and out of the city daily. Kansas City's new Union Station is the largest in America outside of New York City. Kansas City has water transportation to the sea, has a boat line regularly operated, owned by citizens of Kansas City and having a capital of $1\frac{1}{4}$ million dollars.

Kansas City has 126 separate daily mail dispatches, averaging one every 11 minutes during the 24 hours of the day.

Two thousand carloads of freight, including more than 500 cars of package freight, are handled every day. Kansas City has the most efficient plan in America for freight terminals and freight handling.

The population of the territory within ten hours ride of Kansas City is 8,271,050.

In ten years Kansas City increased 51 per cent in population.

James J. Hill, the great railroad builder, says of Kansas City:

"The Missouri River is God Almighty's greatest railway. Kansas City is the destined greatest city west of Chicago, holding an unapproached supremacy of resources and opportunity."

This is what former Speaker Cannon thinks of Kansas City:

"I am going to live as long as I can and I think I shall live long enough to see the census count a million people at Kansas City. At the end of the Twentieth Century there will be three great cities in the country, New York a little ahead, Chicago almost equal. I believe that the third great city at the end of the Twentieth Century is to be Kansas City, at the Gateway of the West."

We have claimed for Kansas City, the name, "America's Most Beautiful City," and its wonderful park and boulevard system amply justifies our claim. The park system was begun in 1892. It consists of 2,591.75 acres of parks, boulevards and parkways. Nineteen separate parks and thirty separate boulevards and parkways are all connected in such a way as to constitute the longest system of municipal boulevards in America, over fifty miles in length. The Cliff Drive, with three and one-half miles of unsurpassed scenery, is one of the most beautiful municipal drives in the world. Swope Park, one of the largest parks in the country, was donated to the city in 1896 by Col. Thomas H. Swope. This great park contains 1,385 acres. Since its erection over half a million dollars has been spent in its improvement. Forty public tennis courts are maintained by the park board in the various city parks. The cost of the park system up to now has been over \$12,000,000.

Kansas City possesses more beautiful homes than any other American city.

Animals slaughtered in the packing houses of Kansas City during 1912 were 5,657,542. The value of the packing house products during 1913 were \$178,000,000.

The value of the yellow pine lumber products of Kansas City manufacturers during 1913 was over \$25,000,000.

The distributing freight rates from Kansas City to the Trans-Mississippi Territory are from \$4.00 to \$10.00 per ton lower than from any distributing point east of here. The business of Kansas City's factories and

distributing houses total over \$600,000,000 per year.

Kansas City's output of flour for 1913 was 2,221,617 barrels.

Agricultural implements worth \$40,000,000, were distributed from Kansas City in 1913.

The life and casualty insurance agencies and companies of Kansas City in 1913 collected \$16,256,000 in premiums.

Kansas City grain merchants bought and paid for over 100,000,000 bushels of grain during 1913. Kansas City is the largest winter hard wheat export market in the United States.

Kansas City is the world's greatest hay market, handling 32,000 cars in 1913.

Total number of pieces of mail matter delivered by the Kansas City Postoffice during 1914, 135,215,973, an increase of 16,000,000 over the preceding year. The total number of pieces of mail matter dispatched out of Kansas City Postoffice during 1914 was 267,336,235, an increase of 32,280,000 over the preceding year. The gross postal receipts of the Kansas City Postoffice for the year 1914 were \$2,897,325.93, an increase of \$254,000 over 1913. The number of registered, insured and C. O. D. mail packages handled by the Kansas City Postoffice during 1914 aggregated in value \$22,564,186.96, an increase of \$1,400,000 over 1913.

The Postoffice Department at Washington is considering with recommendations of the Treasury Department, the matter of a new \$3,000,000 Postoffice building for Kansas City, to take care of the increased and fast increasing business.

THE APPLE CROP OF 1914.

Conservative estimates made about Jan. 15, 1915, on the holdings of the apple crop gave a total of 6,500,000 barrels in storage, figuring the boxed fruit at three boxes to the barrel. This estimate was for the whole United States and shows the whole available supply at that date. The Canadian holdings are estimated at some less than 500,000 barrels. The consumption is estimated at about 300,000 barrels per week and the present supply is estimated to last until the end of May.

The apple crop of the United States for 1914 was estimated at 230,249,000 bushels, the average price being 62 cents per bushel. Of this crop the state of Missouri produced 11,490,000 bushels, the state of Texas 483,000 bushels, and the state of Oklahoma 1,458,000 bushels.

U. S. Government Homestead Lands in Arkansas

UNITED STATES LAND OFFICE

Camden, Arkansas, Mar. 10, 1915.

Sir:—

In reply to your inquiry of recent date we have to say the lands subject to entry in this district, comprising twenty-two counties, on July 1, 1914, amounted to 31,845 acres, as follows: Ashley 83, Bradley 247, Calhoun 534, Clark 210, Cleveland 263, Columbia 189, Drew 40, Garland 5,823, Hempstead 2, Hot Springs 2,639, Howard 3,396, LaFayette 244, Little River 30, Miller 223, Montgomery 6,015, Nevada 329, Pike 1,511, Polk 7,321, Saline 889, Sevier 1,688, Union 169. In addition to this acreage, there are about 250,000 acres of vacant land in this district in the counties of Garland, Hot Springs, Howard, Montgomery, Pike, Polk and Scott embraced in the Arkansas National Forest, which is not subject to entry under the regular homestead act, but may be entered when classified by the District Forester, at Albuquerque, New Mexico, as agricultural in character, upon application being filed with him to have a specified tract restored to entry as agricultural land.

The above consists of almost any kind of land a person could wish, except prairie. The chief crops raised in this section are cotton and corn, but any kind will grow abundantly that is adapted to the climate. Fruits of all kinds, berries and vegetables produce prolifically and when properly cared for find a ready and profitable market. Large orchards have been planted in many of the counties, and there is not a county in the district that does not produce great quantities of Irish potatoes. Arkansas has a world-wide reputation for her strawberries and apples. The climate and water are good, winters mild and summers temperate. Churches and good schools are to be found in all localities.

These lands are not for sale except when they are practically unfit for agricultural purposes; then they may be purchased under what is known as the Timber and Stone Act. Application under this act must be accompanied by a filing fee of \$10, upon receipt of which an appraised valuation will be placed on the land by a representative of

the Government, the minimum price being \$2.50 per acre.

Every citizen of the United States, native born or naturalized, who has not taken advantage of the homestead law, is entitled to enter 160 acres of land. For this a fee of \$14 is charged. Application to enter may be made in this office or before the Clerk of the county in any of the counties mentioned. Residence of three years and a compliance with the law as to cultivation secures patent for the land. If the entryman, after fourteen months residence and cultivation, desires he may purchase the land at \$1.25 per acre.

Plats showing vacant United States land will be furnished for \$1.00 per township.

Very respectfully,

O. B. GORDON,

Receiver.

THE SOUTHERN LUMBER INDUSTRY IN 1913.

Secretary George N. Smith of the Yellow Pine Manufacturers' Association of St. Louis has compiled for the year 1913 a statistical report on the activity of the Southern lumber mills. It gives the annual output of 1,159 mills as follows:

States.	No. Mills	Feet	Per Ct.
Arkansas.	121	186,843,074	1.83
Texas.	170	964,832,085	9.73
Louisiana.	210	1,665,316,559	16.83
Mississippi.	284	2,916,308,393	29.43
Alabama.	229	1,922,049,711	19.39
Georgia and Florida.	125	1,108,648,808	11.18
Missouri and Okla.. . . .	20	1,146,532,965	11.67
Total.	1,159	9,910,532,595	100

SHIPPING TOMATOES IN CARLOADS.

The Tipton Ford, Mo., and Belfast, Mo., Tomato Association handled their first commercial tomato crop last year. They shipped ten car loads in all and are well pleased with the result. Each car load holds 1,070 crates of four baskets, a crate being about equal to a third of a bushel. The last car shipped to Tulsa, Okla., brought 30 cents per crate. The others, shipped to Dallas and Fort Worth, Tex., brought much better prices. The outcome of the venture was much better than was expected.

Miscellaneous Mention

Neosho, Mo., Canning Industry

Neosho's Canning Factory has been the busiest place in Neosho or Newton County for ninety days last fall. It had 150 people employed and was kept running 24 hours every day with an output of 20,000 cans of tomatoes per day. The factory was kept going night and day, the crews working in shifts of about eight hours each. The biggest tomato crop ever grown in the county was produced last year and for a time the tomatoes came in faster than the factory could take care of them and sometimes the wagons were compelled to stand in line for hours waiting for room to unload. In addition to the crop contracted for by the cannery it endeavored to take care of a large crop grown by others, and succeeded.

The biggest job at the factory was the peeling of the tomatoes which had to be done by hand and which kept over a hundred women and girls busily employed. The factory paid the price of ten dollars per ton

for tomatoes delivered. A ton contains about 33 bushels, which figures about 30 cents a bushel. This appeared as a low price for raw material, but was nevertheless very profitable for the growers this year. A large part of the output was sold to the wholesale grocers as rapidly as it could be packed and the ready sale of the whole output is practically assured.

In all the Neosho canning factory packed 2,193,700 pounds of tomatoes. These shipped raw would have made 129 car loads of 17,000 pounds each; packed they amounted to 673,000 cans, or 28,000 cases. This is more than the pack of any three previous years combined. The amount paid out for tomatoes was \$10,966.85, and the amount paid out for labor was over \$12,000. To store these 28,000 cases of tomatoes a warehouse one hundred feet long, forty-two feet wide and eleven feet high would have been required.

Neosho is proud of her cannery and certainly has good reason to be.



NEOSHO, MO., HARVEST SHOW, 1914.

A NEW YORKER'S PLAN TO REGULATE THE FARMERS.

To the western man, particularly the man from Kansas, the people of the state of New York appear provincial and slow. A bright idea can sprout in Kansas over night and produce fruit before the sun goes down next day, but the amiable New Yorkers have shown a disposition occasionally to follow a good example. The introduction of a bill in the Kansas legislature to provide a commission government for the farmers of that state, published in the newspapers in New York state, resulted in the introduction of a bill in the New York legislature following out the same general lines. Senator N. Monroe Marshall of Malone, N. Y., representing a constituency which ordinarily describes the Adirondacks as the "South Woods," has seen the possibility which the Kansas humorists saw, and on March 23 introduced the following bill:

1293. Marshall. Amending the Agricultural Law (new Sections 319 to 327 inclusive) by providing that "only one price for a given commodity shall be lawful. A farmer desiring to change a price must file a schedule with the Agricultural Department, which schedule shall go into effect at expiration of thirty days unless it is suspended by the commissioner at the instance of any consumer.

"No price shall be increased except upon proof that existing prices are confiscatory.

"Commodity," as used herein, includes all grains, vegetables, livestock and dairy articles.

"Every hired man shall work only eight hours a day. He shall not work on Sunday or on legal holidays, or on Jack Love's birthday.

"Every farmer shall hire one more hired man than his work requires.

"The only permissible exceptions to the last two provisions shall be in periods of stress resulting from earthquake, Halley's comet or European invasion.

"All wagons and poles and doubletrees shall be provided with couplers, coupling by impact, so that the hired man need not go between the wheels of the wagon and the heels of the horses.

"All bulls, when moving on the highway or in unfenced areas, shall be equipped with bells of not less than fifty pounds in weight, a steam whistle and an electric headlight of at least 1,000 candlepower.

"Sheds shall be built over all fields where hired men have to work in summer. All field engines and machinery shall be fenced in, all belting shall be encased in metal housings, and all grindstones, churns, hay

cutters, bulls' horns and other moving parts shall be strongly encased in sheaths for the protection of the hired men. All barns, sheds and other outbuildings shall, in cold weather, be adequately heated and at all times shall be well lighted and policed.

"If a calf is delayed in arriving, or is born dead, the farmer shall instantly provide another cow whose calf shall be born that day.

"The right to mortgage real estate is a franchise reserved to the state. No farmer shall make any mortgage or incur any indebtedness extending over a period of more than one month without the written approval of the commissioner.

"To enforce the provisions of this act a commission is created to consist of five persons selected by the Governor with a view to placating as many shades of political opinion as possible. No commissioner shall, however, be deemed as qualified by lack of previous political or other experience."

AUTOMOBILES AS AIDS TO RAILROADS.

"Recently there was called to my attention statements made by Newman Erb, president of the Minneapolis & St. Louis R. R., and one of the keenest financial men in the country," said J. J. Cole, president of the Cole Motor Car Co. of Indianapolis, in a recent discussion.

President Erb gives the automobile due credit for the good it has accomplished. He stated that \$2,000,000,000 was a conservative estimate of the increased value of farm lands due directly to the motor car.

"A few years ago farm lands which were located near the railroads were worth about \$75 an acre, where the land twenty miles back could hardly be sold for \$10 an acre. With the introduction of the automobile, however, the land was brought within a few minutes' run of the railroad. Its value increased tremendously because of this fact. The farmer who owns an automobile and lives twenty miles from a shipping point is today as close to the markets of the world as is the man whose land is within three or four miles of the railroad. The automobile will make the run to the shipping point in less time than horses take to cover the shorter distance."

The Missouri corn crop for 1914 amounted to 158,000,000 bushels, that of Kansas to 87,338,272 bushels and that of Louisiana to 30,808,005 bushels.

HE KNEW BEANS.

Northwest Arkansas, particularly Benton and Washington counties, are noted for their production of special crops of various kinds. The farmers of this region are not afraid to try new propositions, to produce something different from the ordinary crops of the country. Mr. H. E. Clark of Decatur, Ark., during the season of 1914 produced one acre of beans. He picked 475 third bushel crates, which he sold on track for \$282. This is the record yield for this part of the county for this year and Mr. Clark made more money from this one acre of beans, than from any other crop on the same area of ground. The patch was well manured before planting and this and the exceptional good care they received, are the reasons given by Mr. Clark for this exceptional yield.

Lake Charles, La., December 12, 1914.

Mr. William Nicholson,

Dear Sir:—We are getting many inquiries from all sections of the country. Quite a number of prospectors have dropped in on us recently. Some of these have located. Others are coming. A young man from Baltimore, Md., (German) bought a forty-acre tract about three miles from this city, on one of our main gravel highways.* He came after having received one of my printed lists of properties offered for sale. He is going to specialize on figs, but will grow Satsuma oranges and truck also. I look for quite an influx of good people this winter. We have something to show them. Truck of all kinds growing, modern school buildings, the very best system of highways being constructed, rural free delivery, telephone connections, a hospitable people, and a 100 per cent climate. Thanking you for past favors, with kind regards,

Yours very truly,

LEON CHAVANNE.

*He came from the Philippine Islands and I got his name from your Current Events mailing list.

An acre of corn yielding ten tons of silage will feed a cow or steer forty pounds a day for nearly a year and a half.

THE KNOD FRUIT AND TRUCK COMPANY OF GILLHAM, ARK.

This company probably operates the largest truck farm in the state of Arkansas and has in cultivation about 400 acres. From a report they made December 19, 1914, their shipments of fruit and vegetables during

the season of 1914 amounted to 26 carloads. They had under cultivation and will have in 1915, radishes, 125 acres; pearl onions, spinach, turnips, beets, carrots, egg plants, English peas, tomatoes, bell peppers, 35 acres; string beans, 12 acres; cucumbers, Elberta and Mayflower peaches, 20 acres; cantaloupes, 125 acres; berries, 12 acres; grapes, 10 acres.

Shipping begins some time during March and will end some time during August. Planting commences about February 1st with many of the vegetables and continues through March and April. About ten carloads of fertilizers, packages, seeds and wrappers are required to take care of these vegetable crops, and over two carloads of implements are used. During the shipping season from 300 to 500 people are employed to harvest the crops and prepare them for market. Great care is exercised in packing and grading cantaloupes, cucumbers, fancy peaches, and tomatoes being carefully wrapped and sold under a special brand. The shipping is done almost entirely in carload lots, though express shipments are numerous. Mr. Paul Knod, Jr., is the manager of this farm.

THE STRAWBERRY OUTLOOK FOR 1915.

Reports from Texas and Arkansas up to March 12 are optimistic in regard to the fruit crop of 1915. There have been frosts quite recently, but the weather has been cool enough to prevent the premature swelling of the fruit buds, and on the whole the fruit prospect is considered very good.

The reports pertaining to the strawberry crop are good from south Missouri, and northern Arkansas, and from Louisiana, Texas, Tennessee, Mississippi, Alabama and Florida. The manufacturers of fruit packages report a strong demand; in fact, a demand unusually good.

Anderson, Mo., reports 300 acres in berries this year, with an outlook for a crop of fifty carloads. The Aroma berry is the principal variety grown here. Sarcoxie, Mo., will have about sixty carloads and Monett, Mo., about sixty carloads. Johnson, Ark., will ship from 40 to 45 carloads and large carload shipments may be expected from Neosho, Tipton Ford, Goodman, Mo., and Gravette, Gentry, Rogers, Decatur, Bentonville and Siloam Springs, Ark. The berries in East Texas are now in bloom and will soon begin to move. Florida and the Texas and Louisiana coast country have been shipping for some time past.

The cost of growing one acre of straw-

berries in southern Arkansas has been estimated as follows:

Rental of the land, \$3.50 to \$5.00.	
3,000 plants, at about \$2.50 per thousand.....	\$ 7.50
Plowing and harrowing.....	3.50
Setting the plants.....	4.50
Plowing ten times.....	10.00
Hoing the first time.....	3.00
Hoing the second time.....	7.00

This will make about \$40.00 for the first year's culture. After the first year the cost will be from one-fourth to one-half less, or from \$10 to \$20. The first crop is generally the best; the second year should be almost as good, with a third crop of perhaps, 75 crates per acre. The first two crops, under ordinary circumstances, should yield from 200 to 400 crates, which should net the grower from \$1.00 to \$1.50 per crate. The cost of picking 400 crates at present prices, about \$200.

LOUISIANA CITRUS FRUITS.

Louisiana can boast of a larger variety of citrus fruits than almost any other state in the Union. Its possibilities as a producer of citrus fruits have been exploited only in a minor way. For years there has been a cultivation of oranges, mandarins, grape fruit, and lemons, but not for commercial purposes until the past five years.

The most valuable fruit of Louisiana is the orange. It is the native "Queen of Fruits." Nine varieties are produced in the state, the principal of which are the sweet, sour, myrtle mandarin, and Brazilian. The Louisiana orange is declared by many connoisseurs to be the most delicious of its kind. The best producing parishes are St. Bernard, Plaquemine, Orleans, Jefferson, St. Charles, St. John the Baptist, St. James, Lafourche, Assumption, Terrebonne, St. Mary's, Iberia, Vermilion, Cameron and Calcasieu. There is always a ready market in New Orleans for this fruit, as well as in the Northern and Eastern cities.

Now it has been discovered that Louisiana will produce citrus fruits of all kinds which are unsurpassed anywhere on earth. The Creole oranges have become famous in the markets of the North for their sweetness, flavor, grading, firmness and packing qualities, and the grape fruit is excelled by none in delicious flavor and size, percentage of juice, texture of the meat and skin. The mandarins are wonderful in their prolific growth and general excellence and the revenue derived from their culture is so large that those who have grown them are indeed qualified to bear witness to this fact. But the areas devoted to their cul-

ture in this way are yet small and the cultivation is in a way experimental. Fruit dealers and experts in cultivation say that the opportunities presented here for this development cannot be surpassed anywhere and predict that the state of Louisiana is destined to become the orangeland of the western hemisphere. And what has been done in a small way in the strip along the lower coast country near New Orleans has been accomplished in an even more definite manner in Western Louisiana in Calcasieu and Cameron parishes. In 1912 the output of these regions in oranges, mandarins, navel oranges, tangerines, and grape fruit amounted to approximately 250,000 boxes, while that of the Plaquemine parish neighborhood and in St. Bernard was less than 200,000 boxes. But it is freely stated that this is merely the beginning. Students of farm conditions say that the entire Gulf coast strip possesses great advantages for the growth of citrus fruits, and that not only oranges can be produced but that figs and pecans develop to a great extent. It is said that fully eight million acres can thus be cultivated into small plots producing millions of boxes of luscious oranges, grape fruit, mandarins, tangerines, navels and lemons.

ELIMINATING THE STUMPS ON CUT-OVER LAND.

East Texas and West Louisiana, in places are still covered with forests of yellow pine and other timber, but several million acres have been denuded within the past fifteen years, and the process of denudation continues from year to year. From this cut-over land the pine timber, found mostly on the uplands, has been removed, that is to say, the merchantable pine timber has been cut out. Along the streams, in the bottom lands, the prevailing timber is beech, ash, gum, oak, etc., but little of this has been cut. After the loggers have departed from the pine uplands, there remains a residue of tree tops, fallen timber, stumps, and some slender young trees not thick enough to run through a sawmill.

After a time this land is required for cultivation and of course must be cleared and the wastage gotten rid of. The first thing to do is to drag the fallen timber and tree tops into piles and set it afire, after reserving what can be used for fencing, barns, outhouses and household fuel. Next, the young saplings are cut down and then comes the elimination of the stumps.

The native farmers rarely let the stump worry them and just plow around them until the crops are harvested. During the fall and winter they burn out some of them and after four or five years have a clear field. A little matter like this would not keep them awake o' nights. When finally cleared, they estimate the cost at about five or six dollars per acre.

The newcomer in Texas and Louisiana usually wants a clear field before he begins cultivation and in most cases lets the job of eliminating stumps by contract. Stump pullers of various kinds are in use in some localities, but the preferred method is to burn the stump in place. A big solid stump burns but slowly. If it is split and partially shattered the air can circulate through it and then there is rapid combustion.

Two men generally take a contract of this kind. One of them uses a boring machine, a contraption which he trundles about as he would a wheel-barrow. He pushes it up against a stump and holds it there and in a few minutes he has bored a hole, just the right size to compactly hold a stick of dynamite. If it happens to be an extra big stump he bores two holes and goes after the next victim. Following the borer, comes his compadre, the dynamiter, carrying a box of dynamite sticks and a lot of fuses. With a long round stick he cleans the trash and shavings out of the hole, inserts a piece of dynamite and punches it down firmly with the stick, then he inserts a fuse and some more dynamite. He goes from stump to stump at a lively gait. He and the borer must hustle to make a day's wages at one and one-half cents per stump. Three hundred a day is considered a good day's work.

When he has a satisfactory number of stumps loaded, his associate and the youngsters about the farm are ordered to betake themselves out of range and the dynamiter, with a sliver of burning pine wood in hand, moves swiftly from stump to stump and sets fire to the fuses. In a minute or two the liveliest kind of a bombardment begins and for a short time the air is full of brown dust, flying splinters and chunks of pine wood. It takes an artful dodger to keep an eye on half a dozen stumps about to go off in a tantrum and set fire to the fuses on another lot of them.

When the borer and the dynamiter have gone their way to dynamite more stumps on another farm, the new settler, man, wife and youngsters gather up the fragments of splintered wood and heap them about the stumps and set them afire. The stump is

thus rapidly consumed and usually burns from six inches to two or three feet below the surface of the field, which is now ready for the plow. The plowing brings up some roots and fragments of pine, which are either burned or otherwise disposed of and the field is now ready for planting. When a dozen or more farms are treated to stump elimination simultaneously in this way there is a smoky atmosphere for a week or two. Plowing begins about the end of January in Southern Texas and Louisiana and shortly after that farming operations are under full headway.

WHAT ONE GALLON OF GASOLINE WILL DO.

It is difficult to realize the amount of stored energy in a gallon of gasoline, says H. L. Thomson of the Department of Agronomy at Oklahoma Agricultural and Mechanical College. In a gallon pail it looks very small, but when burned in a small two or three-horsepower engine the amount of work accomplished is surprising. Even though so much work is accomplished, four-fifths of the energy in the gasoline is wasted in the best engines—in friction cooling and the exhaust gases. Yet in a good engine it should give ten-horse-power hours or run a one-horse-power engine for a ten-hour day.

Tests have shown, says Mr. Thomson, that one gallon of gasoline used in an engine can do the following work:

Shell 264 bushels of corn.

Grind 486 bushels of corn.

Separate the milk from 300 cows.

Do twenty weekly washings without wringing.

Grind twenty sickles.

Pump 2,454 gallons of water from a 43-foot well.

Pump 1,720 gallons of water from a 159-foot well.

Cut four acres of grain if harvester is drawn by horses.

Bale four tons of hay.

Mix thirty-five cubic yards of cement.

Carry one ton fourteen miles on a small truck.

Carry two passengers in light car thirty miles.

Plow two-fifths of an acre of average land.

Make electricity for eight lights (fifteen-candlepower tungsten) for thirty hours.

Cut and lift thirty feet four tons of silage with a blow cutter.

The Mechanical Department of Railway Operation

By W. H. Sagstetter,

before the Shreveport Rotarian Club, February 12, 1915

Much has been said and written in the past concerning the various departments connected with the operation of railroads, but it happens very seldom that the active railroad man has an opportunity to express himself upon the subject with which he is familiar before a body of men whose field of endeavor lies in other directions. When opportunity to speak or write comes to him his audience is usually composed of men engaged in pursuits similar to his own.

There is in existence an extensive literature containing many interesting and fascinating articles and papers covering the many phases of railroad operation and management and discussions of manifold problems arising in all departments, but I believe that I am safe in assuming that perhaps not one out of a hundred business men meets with the opportunity to read the magazines and other publications relating more especially to the operation of railroads. The writers in these publications are competent and criticisms of faulty methods are read with serious attention, because both writer and reader have a knowledge of the subject under discussion.

There is another class of publications embracing daily newspapers, weekly and monthly periodicals, etc., which cater entirely to the demand of the public for news. The writers and gatherers of news are such by profession and many of these have never labored a day at any kind of work on a railroad in any department. They have no technical or practical knowledge of railroads or their operation, yet they write voluminously on this subject, frequently offering criticisms which are not based on facts. A cub reporter barely out of his teens can tell an unsuspecting public more about a railroad from its preliminary survey to the operation of a fast up-to-date passenger train than could the superintendents meeting at a conference. Unfortunately, the information thus given the public through the hundreds of daily, weekly and monthly publications is the fruit of a good imagination, carrying vague conceptions of railroad operation and erroneous views, forming a basis for deluding the public, which, believing itself imposed upon, naturally demands the abatement of evils,

which as a matter of fact do not exist. There is no intention, apparently, on the part of the press to wilfully injure the railroads, but the effects of misleading statements made from lack of correct information is injurious nevertheless.

Few people have any idea of the enormous expense involved in operating a railroad. I can touch upon one branch with which I happen to be familiar and that is the part relating to the maintenance of the rolling stock and the cost of its operation. The maintenance of track, general administration, cost of securing and holding traffic are not considered in this statement and form additional expense.

The income of a railroad is derived from two sources: the transportation of passengers from point to point and the transport of commodities, as freight, mail or express shipments. In order to satisfactorily transport the traveling public and commodities, a railroad must possess equipment of various classes in sufficient quantity and in addition thereto the "power" necessary to keep this equipment moving in a safe and expeditious manner.

The maintenance of this equipment is a large item of expense—to maintain it properly is a larger one. There are approximately 65,000 locomotives, 2,300,000 freight cars and 50,000 passenger cars in service in the United States. All these are subject to damage through the ordinary traffic, deterioration and accident.

The following shows the cost of operating a six-car passenger train for the distance of one thousand miles:

Cost of locomotive repairs and inspection.	\$11.60
Cost of handling locomotives at shops or terminals, before being delivered to engine crew.	19.60
Cost of fuel.	101.30
Cost of water for locomotives.	5.50
Cost of lubricating locomotive and tender.	2.20
Cost of miscellaneous supplies.	2.90
Other expenses, chargeable to cover superintendence, wear and tear on machines, stationery, etc.	11.00
Cost of passenger car inspection and repair.	63.50
Cost of cleaning passenger cars.	19.90

Cost of heating and lighting.....	15.80
Cost of lubricating.90
Other expenses in handling of passenger cars by shop employees....	7.60
Ice and water.....	3.75
Wages of engineer and fireman...	74.30
Wages of train crew.	155.50
Cost of switching cars, building train, etc.	58.00
Total cost.	\$653.35

This does not take into consideration supervision given by the transportation department, cost of dispatching train, or any other expense incurred by any other department of the railroad.

Expenses of this kind vary according to climatic conditions, cost of material, magnitude of power used, the cost of labor and topographical conditions of the country in which the train is operated. It is, however, a fair estimate of the average cost of operating a six-car passenger train one thousand miles in the United States.

The average life of a locomotive in which it is supposed to be able to produce efficient result is about fourteen months, but this varies a great deal according to the class of engine and the service which it performs. When an engine has been out of the repair shop this length of time she is again overhauled or repaired, and those parts that have been worn, broken or deteriorated are repaired and replaced with new and the locomotive goes forth again to do such duties for which it was originally designed. The average cost of doing this class of repairs varies from \$2,000 to \$4,000, according to the size of the locomotive, the parts that require repairs, facilities for doing them, and wages paid to the various classes of mechanics.

The construction, inspection and maintenance of the freight equipment comes under the supervision of the mechanical department, and in point of importance is equally as large, if not a larger factor in modern railroad operation as is the locomotive.

Only a few years ago freight cars were built entirely of wood, excepting the trucks and the necessary iron work to brace them. These cars, it was found, could not meet the demands of an increasing traffic, could not withstand the stress and strain they received in ordinary operation for any longer period of time, and necessity demanded stronger construction. Steel under frame cars have rapidly superseded the old type and very few railroads of today are building wooden underframe cars. Of course a change of this character in the equipment

tends to largely increase the cost of construction. It is predicted that within a very few years freight cars with wooden sills will not be accepted for the transport of interstate freight.

The repairs to these millions of cars throughout the United States is a great item and the various roads have a system of rules known as the Master Car Builders', by which every company that handles cars is compelled to take care of the car that belongs to the other line in just as an efficient manner as he does his own.

The average life of a wooden freight car has been estimated as sixteen years. During this time it is necessary to have the car rebuilt for general repairs, approximately three different times, at an average cost of \$150.00 each. The life of a steel car is longer and the maintenance is less, due to its being more strongly constructed; however, the average cost of repairs per car mile for both wooden and steel cars is approximately five and a half mills per mile, or for a train of sixty cars the sum of \$330.00 for one thousand miles.

No railway company can afford to neglect in any way the keeping up in first class condition of its equipment. It costs much more to work with inefficient equipment than it does to keep it in perfect repair. In recent years there has been much legislation on the part of the various state legislatures covering the maintenance of railway equipment, but I feel safe in saying that the railways in their own interest would have done all the things provided for by legislation and had been doing them for years.

One cause of faultfinding on part of the public is delay in the arrival of trains. Very few seem to realize that when a train is late there is a very good reason for the delay. Sometimes there is a defect in the machinery not discovered until the train is enroute, at other times freshets or other natural causes require that extra caution be exercised in order to avoid serious accidents. The public is put to some inconvenience, but it was for the safety of the traveling public and for its goods in transit that a few hours' time was lost. If the public understood what causes a delay it would feel more like complimenting than criticising the folks that operate the trains.

There is a delay approximately for every ten thousand miles an engine runs, and some engines make as much as fifty thousand miles without a delay. This includes freight and passenger service. The average delay to a passenger train is about one train out of every hundred, the average

delay being two hours and ten minutes. Compare this with the delays which you have on your automobile, even when it is under the supervision of an expert mechanic and kept in the best of garages. Make one hundred trips of one hundred miles each and I will venture to say that you will have a delay. If not, then make five hundred trips of one hundred miles each and I will guarantee it.

It is human nature to lay great stress on the value of our own desires and the valuable time we are losing while waiting for a delayed train, yet a moment's thought should convince us that the safe arrival of this train in a majority of cases is due entirely to the delay and had any other course been pursued the train might not have arrived at all.

The American people are acquiring a better knowledge of railroads and their operation. The knowledge acquired is not always obtained from the best sources of information. In 1838 a club of young students in Ohio, according to tradition, arranged to debate the question of railroads—at that time just coming into notice. When they asked for the use of the schoolhouse, they received the following reply from the school board of the city:

"You are welcome to the schoolhouse to debate any proper question, but such things as railroads and telegraphs are impossibilities and infidelity. There is nothing in the Word of God about them. If God had designed travel at the frightful speed of fifteen miles an hour by steam He would clearly have foretold it through His holy prophets—it is a device of Satan to lead immortal souls down to Hell."

Yet the railroads came to Ohio, and after a while the school board was not considered to be the most reliable source of information on the subject of railroads. Some of the modern oracles who rush into print are about equally reliable. Paper is a very patient commodity. Any one can make a statement which cannot be substantiated. It can be refuted and disproven, but not without considerable expense and when proven false a hundred others would be made, requiring a still larger outlay. The general public has no means of ascertaining the truth or falsity and its judgment is guided by the impressions it receives.

One gentleman made the remark that the railroad companies of this country were losing one million dollars per day, due to inefficiency, yet he did not state what amount of money must be expended in order to make things so efficient that this million could be saved. He quoted Mr. F. W. Tay-

lor in this statement, yet he did not state that the Government was losing \$600,000,000 per year on account of inefficiency in the fire department alone. He did not state that the railroads of this country were 100 to 500 per cent more efficient than the Government operation. Yet he could have found this same information with just as little trouble. Mr. Harrington Emerson's essays in Federal Government work, printed in his book "Efficiency," comments on the fact that in making six assays of work of one of the largest Government operations he found the efficiency to be 11.86 per cent. If the railroads' operations were no more efficient than this, for every million dollars spent in operation they would obtain \$118,600 worth of work. The remainder \$881,400 would be wasted.

No one has ever stated that the nearest any industry or manufacturing establishment in the United States was to perfection was about 80 per cent. This, according to the experts, is the highest efficiency yet obtained and prevailed in one of the large harvesting machine manufacturing plants. The great steel industries of this country, that are known throughout the world by their enormous output and quality of goods, are considered by these same experts to be only 49 per cent efficient. These same experts tell us that our Government has lost \$180,000,000 in building the Panama Canal by not being efficient. Is it then to be wondered that an institution that pays the best of salary, supposed to have the most thorough and intelligent men in every line, can produce but 12 per cent efficiency, how we can expect the railroad companies of this country to be perfect. They cannot be expected to be as efficient as a manufacturing plant. A large railroad has a number of shops or repair points scattered over the distance of thousands of miles to take care of its equipment as it is worn out in the different parts of the country. In order to expend the least possible sum on these repairs and to show the highest grade of efficiency it would be necessary to have these various repair points equipped with the most modern tools, and to expend sums that would be entirely inconsistent with the amount of revenue that the railroads now obtain. Whenever the expenditure necessary to increase efficiency is so large that the interest on it will be greater than the saving made in being efficient, it is not policy to make that expenditure.

There is a total railroad mileage in the United States of 356,418 miles, 240,339 of which is main line and 116,179 siding. These rails reach from the Atlantic to the Pa-

cific and from the Great Lakes to the Gulf. If put in a straight line they would go more than fourteen times around the earth or forty-four times through it. They employ directly about 2,000,000 men and women, and support through the wages paid no less than one-twelfth of the entire population of the United States, or about 8,000,000 people.

The transportation industry has reached such magnitude that its welfare is of the greatest concern to the nation. So many branches of industry are dependent upon its prosperity that any change in the conditions affects them all. It has become a barometer which indicates the business conditions throughout the country. Any wilful unnecessary restraint imposed on the transportation industry affects not only the 8,000,000 people who depend on the railways for their subsistence, but also as many more engaged in supplying the needs of railways and beyond these the many thousands of merchants and others who have dealings with the employees.

The conditions under which the railways are now struggling are not natural conditions, but are almost entirely artificial. They are suffering through excessive legislation, most of it puerile and creating unnecessary expense, increasing the cost of maintenance and operation and decreasing the legitimate income to such extent that no sane investor will risk any money on new construction. His money is safe in any other kind of investment, but it is entirely out of his control when it becomes railroad stock or bonds. If the same consideration is shown to the railroads that is shown to other industries and the strangle hold on its sources of income is relaxed, only a short time would elapse before there would be extensions of railroads into undeveloped territory, better service, more comfortable equipments, more effective elimination of danger to life, limb and property, more improvement in the towns, and above all a more friendly feeling of co-operation between the people and the railroads.

Railway Economics

A TON OF FREIGHT.

Did you ever stop for a moment and consider a ton of ordinary freight? It's a good big load for a two-horse team—2,000 pounds. Suppose you had a ton of freight down at the freight depot of any of our railroads? Would you raise a row and go to law with the drayman if he charged you a dollar to deliver it to your home or place of business a mile from the station? We think not. You would consider the charge reasonable and pay it with a smile.

But the freight being at the depot, we conclude that a railroad has brought it there, so let's consider for a moment just what the railroad gets for hauling a ton of freight—and remember that by far the greater portion of the income of the railroads comes from hauling freight.

The average rate on freight is something like a half cent per ton per mile—one two-hundredth part of what the drayman asks.

To buy a pound of beefsteak—a pound of round—for the section man the railroad has to haul that ton of freight from Lincoln to Omaha.

To get a shirt for the conductor, the railroad will haul a ton of freight from Kansas City to Omaha.

When the brakeman wants a new pair of shoes it means that the company hauls a ton of freight from Memphis to Omaha.

A suit of clothes or an overcoat for the engineer means the hauling of that ton from New York to San Francisco and most of the way back again.

A new cross-tie for the roadbed means a ton hauled from Des Moines to Omaha.

A new rail is equivalent to a new suit of clothes—good clothes—and takes the same long haul to earn it.

And when it comes to the building of a mile of new road—a mile of first-class track costs something like \$25,000—the railroad has to haul that ton of freight a distance equal to two hundred times around the world.

Now that you have considered a few angles of that ton of freight, do you really think you get your money's worth when you pay a freight bill, or are you still of the opinion that freight rates are too high and the railroads are robbers?

WHY NOT INVESTIGATE?

On a mere suspicion, unsupported by tangible evidence, that the railroads were generally over-capitalized congress ordered

a physical valuation that will cost fifty million dollars. That illustrates the readiness at Washington to investigate anything that is charged with a public interest.

That the federal government itself is badly organized, inefficient and wasteful is not a mere suspicion but an admitted fact. Presidents have called attention to it. Persons most-familiar with the concern have repeatedly affirmed it. Instances have been pointed out.—The only real difference of opinion is as to the amount of waste. The government spends a thousand million dollars a year of public money—roughly, half the country's annual freight bill. If it were a private concern levying a like toll on the public, and under a like charge of waste, it would have been overhauled some time ago.

We have no more faith in an investigation of the huge concern at Washington from within than we should have in an investigation of the railroads or the trusts by themselves. We do believe that a body of capable, independent men, familiar with the organization and methods of the best-run private businesses, could point out ways of co-ordinating and economizing the work at Washington that would be beneficial to the public, which foots the bills. There should be no partisanship about it and no politics about it.

Whatever the exact facts may be, virtually everybody believes that the government wastes much public money. That is not a profitable thought to be afloat in the public mind. How much and how little truth there is in it ought to be determined; and there is quite certainly enough truth in it to warrant an investigation—not from the inside but from the outside. What representative, nonpolitical body will take it up?—Saturday Evening Post.

TIMELY WORDS OF WARNING.

By William Sproule, Southern Pacific Company.

Unless the railroads can make liberal earnings to maintain their credit, so they may get new money to make improvements and extensions, responsive to the business of the public, it is the public who will suffer, because there will be no field of expansion into which the general business of the people can develop. And further, if business should, within its present bounds of distribution, boom again, as it did in 1904, 1905 and 1906, there will be such a congestion of railroad facilities in the coun-

try as will stop the boom, congesting the business of the public and preventing that kind of material improvement and development which every man of business, large or small, is looking forward to for his salvation. The railroads are not ordering equipment to any great extent because they cannot pay for it. This nation needs a soundly informed and constructive public opinion instead of the destructive criticism which destroys confidence and helps to make hard times. Bad methods of a few should not bring censure on all.—Leslie's Illustrated Weekly.

While poetry is foreign to our columns, the verses of Walt Mason, in the "Journal of Electricity, Power and Gas," on "Public Enemies," seem appropriate enough to warrant their reproduction, and hence we give them herewith:

PUBLIC ENEMIES.

If you build a line of railway over hills and barren lands,
Giving lucrative employment to about a million hands;
If you cause a score of cities by your right-of-way to rise,
Where there formerly was nothing but some rattlesnakes and flies;
If when bringing kale to others you acquire a little kale,
Then you've surely robbed the peepul and you ought to be in jail.
If by planning and by toiling you have won some wealth and fame,
It will make no odds how squarely you have played your little game;
Your success is proof sufficient that you are a public foe—
You're a soulless malefactor; to the dump you ought to go.
It's a crime for you to prosper where so many others fail;
You have surely robbed the peepul and you ought to be in jail.
Be a chronic politician, deal in superheated air;
Roast the banks and money barons, there is always safety there;
But to sound the note of business is a crime so mean and base,
That a fellow guilty of it ought to go and hide his face.
Change the builder's song triumphant for the politician's wail,
Or we'll think you've robbed the peepul and we'll pack you off to jail.

Growth of Street Railways

THEN

Eighty-two years ago the first street car operated was exhibited in New York. It was a horse car and was built by John Stephenson. This car consisted of three separate compartments, each compartment being entered by separate doors on the side from a guard rail. Seats were provided on top of the car for thirty or more persons. The car was run on wooden rails and was much like the English railway coach, though it was considerably lower. It was hauled by a team of horses, the conductor remaining on the rail, rain or shine. The company for which it was built was called the New York & Harlem road, running from Princess street, on the Bowery, to Fourteenth street, then up Fourth avenue to Harlem. Fourth avenue, at that time, had not been opened, but the line had been surveyed to One Hundred and Eighty-fourth street. The fare paid varied with the distance, it being about $6\frac{1}{4}$ cents, or a sixpence, from Princess street to Harlem. But the road did not succeed and after six years' operation it gave way to steam cars. This remained the only line in the world until 1852, when charters were granted for Second, Sixth and Eighth avenues, New York.

AND

NOW.

Today there are in the United States more than 1,000 street railway systems, with over 45,000 miles of trackage, with 200,000 officers and employes and 91,000 cars. The capitalization of the companies was, in 1912, \$2,945,299,000. These street railways carried last year over 100,000,000 passengers, more than one-fourth of whom received transfers. Practically all this business has been developed within twenty-five years, or since 1889, when the first demonstration was made of scientific practicability of the electric current for the propulsion of street cars in Richmond, Va. Science having shown what could be done, there were developments to be performed in two other fields—in the financing of electric street railways and their operation. How swiftly and thoroughly this developed, both physically and financially is illustrated by the above stupendous figures. The street car not only begot a new city but a new type of financier and a new field of engineering, and today the results of all this development are so fixed in our civilization that one may ride continuously in trolley cars from New York to Chicago.

PULLMAN UPPER BERTHS.

Many travelers are prejudiced against upper berths in Pullman sleepers, and many of our ticket agents thoughtlessly assist in keeping alive this prejudice. This is done to some extent by stating to travelers to whom a lower cannot be assigned, "There is nothing left but an upper," or "I can only give you an upper," leaving an impression in the traveler's mind that an upper berth is inferior or undesirable.

Would it not leave a better impression, in case the passenger's wish for a lower berth cannot be complied with, to say, "The lowers are all taken, but I can assign you a choice upper berth. The rate is 20 per cent cheaper than the lower?" The traveler may at once see that, considering the difference in the rate, an upper berth has perhaps an advantage over the lower. Then a few words of explanation as to other advantages of the upper may decide the matter favorably with the prospective passenger.

In the more recently constructed Pullman sleepers, upper berths are now furnished

with protection guards, precluding the possibility of falling out of the berth. Reading lamps are also provided in uppers, as well as lowers, and the aisle lamps are under individual control, doing away with the annoyance of unnecessary light. The ventilation in upper berths is also of the best and for that reason alone many travelers prefer them.

As only a limited number of passengers can be accommodated in Pullman sleepers, every effort should be made to dispose of the uppers as well as the lowers, thereby reducing the demand for extra sleepers. The cooperation of ticket agents towards this end will be appreciated both by the railroad and the Pullman Company.

THE KANSAS CITY SOUTHERN OUTING CLUB.

A number of officers and employes of the Kansas City Southern Ry. Co. at the general offices in Kansas City, and a few residing at Drexel and Lisle, Mo., and Pittsburg, Kansas, have organized the Kansas

City Southern Outing Club for the purpose of having available a permanent, attractive place for their week-ends and holidays. To this end they have leased the K. C. S. lake at Lisle, Mo., with other ground in that vicinity.

The improvement has been vigorously pushed and there are now at the lake the K. C. S. Club Home, boating platform, bathing beach, boats, duck blinds, etc. The lake has been restocked with game fishes and a large screen has been placed over the spillway to prevent the escape of the fishes when there is high water.

The club house has three rooms, porch, outdoor furniture and is painted. Inside it is fitted up with cook stoves, sanitary cots, chairs, tables, kitchen cabinets, shelving, cooking implements and everything needed to make it a comfortable abode. Pictures adorn the walls and the windows have lace curtains. The trees around the club house have been trimmed and the underbrush has been cleared out. A path to the house from the railway right of way and a rustic bridge and concrete steps form part of the construction. Altogether it is a nice homelike place where one can spend a day or two and enjoy it.

The club house was finished a short time ago and opened to the members and their guests with an old fashioned house warming. A chef from Kansas City looked after the culinary arrangements, while part of the masculine contingent got up an appetite by engaging in a 'possum hunt, though it is not recorded that the 'possum formed any part of the menu. The ladies present indulged in the making of fudge, popped corn and had a candy pulling. Some of the men, who were too lazy to chase the 'possum, played five hundred, pinochle or whist when they could get partners, and solitaire when they couldn't. The program for the house warming was carried out in full and the twenty-five members and guests present had an enjoyable time.

A snipe hunt, which was not on the program, resulted as usual in two youngsters finding themselves a mile from nowhere about midnight, and glad enough to get back to a comfortable fire.

The club has made good progress with its plans so far and from the program worked out it will have by summer time a delightful place, where its members and their families can spend a few days now and then.

Arrangements have been made to have the keeper of the grounds, who lives within a few hundred feet of the club house, to act as custodian. He has been appointed

deputy game warden and has full authority to act, to enforce the law and to maintain the rules of the club.

An automobile road is to be built into the grounds, flower gardens are to be planted and the place made attractive in many ways. Arrangements are being made for transportation facilities between the club house and the railway station and a telephone line is to be installed at an early day.

The grounds have been posted and advertised and trespassers will be prosecuted. The land owners adjacent to the club grounds have become members of the club and propose to help enforce the law and the rules of the club. Most of the present members of the club are residents of Kansas City, but it is hoped that quite a number of railway folks at Pittsburg and Joplin will join the club in the course of the present year.

The officers of the club are Mr. L. J. Hensley, president; E. L. Estes, secretary, and M. L. Cullers, treasurer. The managing committee is composed of Messrs. W. S. Atkinson, J. E. Fairhead and E. L. Estes, who act on all matters and have devoted much of their time to placing the club to its present splendid condition.

PROMOTING THE PAY CHECK.

The men engaged in operating a railroad are of necessity well represented in numbers and in diversity of employment, but no matter how the task of one individual varies from that of another, the common interest is centered in the good health of the company's purse; in other words, the treasury, the place from which is issued the pay check. The average railway employe thinks that when he has faithfully performed the duty for which he receives his pay check he has done all that he should do. From a narrow minded point of view, the railroad cannot expect him to do more than he is paid for and the condition of its treasury is no concern of his. A pious New England deacon expressed the sentiment more fully when he prayed:

"God bless me and my wife,
My son John and his wife,
Us four, and no more."

And being of the truly good and truly pious, he imagined that he stood in with the Lord and the rest of mankind didn't count.

The self centered railroader, who gives no thought to anything but his own personal interest, and is content to milk the cow (treasury) without helping to feed her, gains nothing in the long run.

The frequent fluctuations in the volume of shop work, equipment repairs, track work, office work and improvement work are due entirely to the fluctuations in the traffic, both freight and passenger, yielding at times, under normal conditions, a fair return, allowing a consistent development to go on, and at other times a scant return, forcing the cessation of necessary work. It means, in short, that an employe's job is more or less in jeopardy all the time while in the service of a railroad.

The duration of employment and its compensation are dependent entirely on the income of the railroad. The average railroader cannot help knowing that it requires money to make the wheels go 'round, yet of all men who work for a living he worries himself but little as to where this money is coming from. If he would study this problem a little he might learn a few things good to know. He would soon learn that freight and passenger earnings are the only source of income, and that upon the volume of this income depends the amount of pay he can get, or if he can get it at all. This item is just as interesting to the section hand as it is to the general manager.

In every line of business or manufacture the employe knows that the income of the firm depends upon the sales of its stock or products. He knows that the goods must sell or there is no job. The driver of the delivery wagon will hustle for orders as energetically as does the best salesman in the house. When business is good and the income is good, it is not difficult for either a merchant, manufacturer or a railroad company to borrow money for extensions, enlargements or improvements, but when hard times come the merchants and manufacturers who find it difficult to borrow funds to meet obligations coming due, get an extra hustle on themselves to sell goods to secure the money needed. Every employe from the manager to the porter at the alley door hustles to find buyers for the goods, realizing fully that there will be no job unless the house can sell its goods. The energy of the whole concern comes to the front. It is the salesman's special job to sell goods, but in a time of stress it is the team work of the whole force that wins the battle.

A railroad has transportation to sell and every man's pay is dependent upon the quantity that can be sold. Freight and passenger agents are employed to sell it and they do, but when business is dull transportation is harder to sell than at

other times. It is the time when an extra hustle is needed and is also the opportunity, when the employe, engaged in other duties, could without involving any extra physical or mental effort help boost the treasury. He could, if he would, promote his company's earnings and if he seriously considered his own interests he should and would.

Every man in this world of ours is dependent upon his fellow men in order to live, and this includes the multi-millionaire as well as the pauper in the alms house. When you pay your grocery or clothing bill has it occurred to you that nearly all these goods come by rail, and that it would be some satisfaction to know that they came over the road you are working for? If they didn't come that way, it would help you and the other employes if they did. The merchant needs you in his business, and while you may not be aware of it you need him and your railroad needs him. A friendly word on your part will often secure a shipment of freight or the sale of a passenger ticket. If your railroad is good enough for you to work with it ought to be good enough to say a good word for it, for by doing so you help keep some man on the job who needs the money. With the personal influence of every employe active in its behalf many things could be done that must be left undone. Many thousands of dollars would go to the treasury that go elsewhere now and many men could work full time who must be laid off because enough money cannot be secured to pay them. Consult your own interest and when you work for a railroad, work for it as you would work if you owned it. If you are paid to do one particular kind of work do it to your best ability, but don't let that deter you from getting your friends and those you do business with to use your railroad to travel and ship freight over.

September 25, 1915, will be just fifty years from the date on which the Missouri Pacific Railway entered Kansas City, Mo. The event is to be properly celebrated this year. The Missouri Pacific, then known as the Pacific R. R. of Missouri, was built west out of St. Louis and connected with the Pleasant Hill and Kansas City R. R., which the Pac. R. R. of Mo. had purchased. In those days it required sixteen hours and twenty minutes to make the run, and the fare was \$14.50. The run is now made in seven hours and ten minutes and the fare is \$5.50.

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